Tax Expenditures and Evaluations

2003

Canada

104-03759/

Tax Expenditures and Evaluations

2003

Department of Finance Canada
Ministère des Finances Canada

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Price: $16.00 (including GST)

This document is available free on the Internet at
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Cette publication est également disponible en français.

Cat No.: F1-27/2003E
ISBN 0-660-19094-X

TABLE OF CONTENTS

Preface 5

Part 1 – Tax Expenditures: Estimates and Projections 7

Introduction 9

What's New in the 2003 Report 11

The Tax Expenditures 14

Table 1 – Personal Income Tax Expenditures 15

Table 2 – Corporate Income Tax Expenditures 26

Table 3 – GST Tax Expenditures 34

Appendix: Description of Tax Expenditures Introduced Since 2000 37

Part 2 – Tax Evaluations and Research Reports 43

Long-Run Projections of the Tax Expenditure on Retirement Savings 45

Elimination of the Federal Capital Tax: Building on the Canadian Tax Advantage 81

PREFACE

Since 2000 the tax expenditure report has been separated into two documents. This document, *Tax Expenditures and Evaluations*, is published on an annual basis. It provides estimates and projections for broadly defined tax expenditures as well as evaluations and descriptive papers addressing specific tax measures.

This year's edition includes two papers. The first paper investigates the impact of projected demographic developments on the future cash-flow tax expenditure cost of registered pension plans and registered retirement savings plans. The second paper analyzes the federal capital tax which, as announced in Budget 2003, will be eliminated over a period of five years.

The companion document, *Tax Expenditures: Notes to the Estimates/Projections*, was published in 2000. It is a reference document for readers who wish to know more about how the estimates and projections are calculated and who want information on the objectives of particular tax expenditures. Tax measures introduced since 2000 are described in the Appendix in Part 1 of this document.

PART 1

TAX EXPENDITURES: ESTIMATES AND PROJECTIONS

INTRODUCTION

The principal function of the tax system is to raise the revenues necessary to fund government expenditures in a manner that is both efficient and equitable. The tax system is also an instrument of policy that serves to advance a wide range of economic, social and other public policy objectives. Tax measures that reflect such objectives include exemptions, deductions, rebates, deferrals and credits, and are typically referred to as "tax expenditures."

In order to define tax expenditures, it is necessary to establish a "benchmark" tax structure that applies the relevant tax rates to a broadly defined tax base—e.g., personal income, business income or consumption. Tax expenditures are then defined as deviations from this benchmark. It is important to recognize that reasonable differences of view exist as to the structure of the benchmark tax system and hence as to what constitutes a tax expenditure. For example, a deduction for expenses incurred in earning income is generally considered as part of the benchmark and thus not as a tax expenditure. But in some cases the deduction may confer some personal benefit, making its classification ambiguous.

This report takes a broad approach and lists as tax expenditures all tax measures that deviate from a basic benchmark tax system. It also includes measures that would not generally be considered to be tax expenditures and would therefore be included in the benchmark tax system. These are shown as "memorandum items." For instance, the dividend tax credit is listed under this heading because its purpose is to reduce or eliminate the double taxation of income earned by corporations and distributed to individuals through dividends. This approach—listing both broadly defined tax expenditures and memorandum items—provides maximum information to the reader.

Caveats

Care must be taken in interpreting the estimates and projections of tax expenditures in the tables for the following reasons.

- The estimates and projections are intended to indicate the potential revenue gain that would be realized by removing individual tax measures. They are developed assuming that the underlying tax base would not be affected by removal of the measure. However, this is an assumption that is unlikely to be true in practice as the behaviour of economic agents, overall economic activity and other government policies could change along with the specific tax provision.
- The cost of each tax measure is determined separately, assuming that all other tax provisions remain unchanged. Many of the tax expenditures do, however, interact with each other such that the impact of several tax provisions at once cannot generally be calculated by adding up the estimates and projections for each provision.

- The federal and provincial income tax systems interact with each other to various degrees. As a result, changes to tax expenditures in the federal system may have consequences for provincial tax revenues. In this publication, however, any such provincial effects are not taken into account—that is, the tax expenditure estimates and projections address strictly the federal tax system and federal tax revenue.
- In the case of the harmonized sales tax in effect in Nova Scotia, New Brunswick, and Newfoundland and Labrador, only the federal cost of the tax expenditures is reported.
- The tax expenditure estimates and projections presented in this document are developed using the latest available taxation data. Revisions to the underlying data as well as improvements to the methodology can result in substantial changes to the value of a given tax expenditure in successive publications. In addition, some tax measures, such as the half inclusion rate on capital gains, are particularly sensitive to economic parameters.

WHAT'S NEW IN THE 2003 REPORT

A number of new tax measures have been introduced since last year's report and others have been modified. These are described below.

Personal Income Tax

Increases to the National Child Benefit Supplement

- The 2003 budget increased the National Child Benefit (NCB) supplement component of the Canada Child Tax Benefit (CCTB) for low-income families by an annual amount of $150 per child in July 2003, $185 in July 2005 and $185 in July 2006. With these increases, plus full indexation, the maximum CCTB benefit is projected to reach $3,243 for the first child, $3,016 for the second child and $3,020 for each additional child, in 2007.

Increases to RPP and RRSP Limits

- The 2003 budget increased the registered pension plan (RPP) and registered retirement savings plan (RRSP) limits. The "money purchase" RPP limit was increased to $15,500 for 2003, $16,500 for 2004 and $18,000 for 2005. Corresponding increases were made to the maximum pension limit of $1,722 per year of service for defined benefit RPPs, bringing it to $1,833 for 2004 and $2,000 for 2005. The RRSP limit was increased to $14,500 for 2003, $15,500 for 2004, $16,500 for 2005 and $18,000 for 2006. The RPP limits will be indexed to average wage growth starting in 2006, and the RRSP limit will be indexed starting in 2007.

Introduction of the Child Disability Benefit

- The 2003 budget introduced a $1,600 Child Disability Benefit (CDB), effective July 2003. The CDB will be paid for children who meet the eligibility criteria for the disability tax credit.
- The full $1,600 CDB will be provided for each eligible child to families having a net income below the amount at which the NCB supplement is fully phased out (i.e., $33,487 in July 2003 for families having three or fewer children). Beyond that income level, the CDB will be reduced based on family income at the same rates as the NCB supplement.

Extension of the Federal Tax Credit for Flow-Through Share Investors[1]

- The 2003 budget extended the expiry date for the temporary tax credit for mineral exploration, introduced in the October *2000 Economic Statement and Budget Update*, from December 31, 2003 to December 31, 2004.

[1] In the 2003 budget this was referred to as the mineral exploration tax credit.

- The credit will also apply to eligible expenses incurred by a corporation in 2005 that are deemed to have been incurred by a flow-through share investor on December 31, 2004, under the "look-back" rule.

Expansion of List of Eligible Medical Expenses

- Effective with the 2003 taxation year, the list of expenses eligible for the medical expense tax credit includes the cost of real-time captioning and other similar services used by persons with an impairment and the incremental cost of gluten-free food products for individuals with celiac disease who require a gluten-free diet.

Removal of Certain Limits on Capital Gains Rollovers for Small Business Investors

- Effective February 18, 2003, limits on the amount of the original investment and reinvestment in some businesses that may be eligible for a capital gains tax deferral are eliminated.
- A reinvestment will be eligible when made at any time in the year of disposition or within 120 days after the end of the year.

Enhancements to the Political Contribution Tax Credit

- Effective January 1, 2004, the political contribution tax credit will be 75% of the first $400 contributed, 50% of the next $350 contributed and $33^1/_3$% of the next $525 contributed. The maximum credit will be $650, and will be available when the taxpayer has contributed $1,275. This change will also apply to donations by corporations.

Corporate Income Tax

Extending Tax Incentives for Renewable and Alternative Energy

- Budget 2003 broadened Capital Cost Allowance Class 43.1, which provides accelerated tax depreciation for certain assets to encourage a more efficient use of fossil fuels and the use of renewable and alternative energy sources, to include certain stationary fuel cell systems, equipment acquired for electricity generation using bio-oil (created from biomass found in forestry and plant residues), as well as certain types of equipment used to heat greenhouse operations. These changes apply to property acquired after February 18, 2003.

Elimination of the Federal Capital Tax

Budget 2003 announced the elimination of the federal capital tax, as follows:

- First, the capital threshold at which the tax applies will be raised from $10 million to $50 million effective 2004. As of 2004 medium-sized businesses under the $50-million threshold will no longer have to pay the tax.
- Second, the rate of the tax will be reduced in stages over a period of five years so that by 2008 the tax will be completely eliminated.
- No changes were proposed to the special tax on large financial institutions.

Federal Capital Tax Rate Reduction Schedule

	2003	2004	2005	2006	2007	2008
Rate (%)	0.225	0.200	0.175	0.125	0.0625	0.00

Extending the Low Tax Rate for Small Businesses

- The 2003 budget increased the amount of active business income eligible for the small business deduction from $200,000 to $225,000 for 2003, $250,000 for 2004, $275,000 for 2005, and $300,000 after 2005. The 2000 budget had already provided that active business income between $200,000 and $300,000 of qualifying Canadian-controlled private corporations be eligible for a reduced 21% rate effective January 1, 2001.

Improving the Income Taxation of the Resource Sector in Canada

- As indicated in Budget 2003 and as set out in the technical paper *Improving the Income Taxation of the Resource Sector in Canada*, the Government intends to improve the taxation of resource income. Specifically, Bill C–48, tabled in Parliament in June 2003, proposes to phase in the following measures over a period of five years:
  - a reduction of the federal statutory corporate income tax rate on income earned from resource activities from 28% to 21%, beginning with a 1-percentage-point reduction to 27% in 2003, and declining to 21% in 2007;
  - a deduction for actual provincial and other Crown royalties and mining taxes paid and the elimination of the existing 25% resource allowance;
  - a new 10% tax credit for qualifying mineral exploration expenditures.
- In addition, a transitional arrangement for the Alberta Royalty Tax Credit is proposed to assist smaller producers in their transition to the new tax structure.

Increasing the Film or Video Production Services Tax Credit

- The film or video production services tax credit provides a refundable tax credit for qualified Canadian labour expenditures. The 2003 budget increased the existing 11% credit rate to 16% for expenditures incurred after February 18, 2003.

THE TAX EXPENDITURES

Tables 1 to 3 provide tax expenditure estimates and projections for personal income tax, corporate income tax and the goods and services tax (GST) for the years 1998 to 2005.

Estimates and projections are developed using the methodology set out in Chapter 1 of *Tax Expenditures: Notes to the Estimates/Projections*.[2] The economic variables used to develop the estimates and projections are based on the private sector average forecast presented in the February 2003 budget.

Personal income tax expenditures are grouped according to functional categories. This grouping is provided solely for presentational purposes and is not intended to reflect underlying policy considerations.

All estimates and projections are reported in millions of dollars. The letter "S" ("small") indicates that the cost is less than $2.5 million, "n.a." signifies that data is not available to support a meaningful estimate/projection, and a dash means that the tax expenditure is not in effect. The inclusion in the report of items for which estimates and projections are not available is warranted given that the report is designed to provide information on measures included in the tax system even if it is not always possible to provide their revenue impacts.

Work is continuing to obtain quantitative estimates and projections where possible.

[2] Available on the Department of Finance Canada Web site at www.fin.gc.ca.

Table 1
Personal Income Tax Expenditures*†

	Estimates			Projections				
	1998	1999	2000	2001	2002	2003	2004	2005
				($ millions)				
Culture and recreation								
Deduction for clergy residence	55	56	68	64	65	67	67	68
Deduction for certain contributions by individuals who have taken vows of perpetual poverty	S	S	S	S	S	S	S	S
Deduction for Canadian art purchased by unincorporated businesses	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Assistance for artists	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deduction for artists and musicians	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of capital gains on gifts of cultural property[1]	11	16	14	10	10	10	10	10
Education								
Tuition fee credit	260	295	315	270	280	290	300	310
Education credit[2]	120	130	135	240	250	265	270	270
Transfer of education and tuition fee credits[2]	335	330	290	400	410	420	430	440
Carry-forward of education and tuition fee credits	10	74	120	105	105	110	110	115
Student loan interest credit	46	59	66	64	65	67	69	71
Registered education savings plans	30	26	42	54	68	83	97	98
Partial exemption of scholarship, fellowship and bursary income[3]	6	6	29	24	25	25	25	26

* **The elimination of a tax expenditure would not necessarily yield the full tax revenues shown in the table. See the publication *Tax Expenditures: Notes to the Estimates/Projections*, published in 2000 and available on the Department of Finance Canada Web site (www.fin.gc.ca), for a discussion of the reasons for this.**

† The February 2000 budget fully indexed, effective January 1, 2000, those parameters that were previously only partially indexed. The *Economic Statement and Budget Update* of October 2000 reduced all personal income tax rates and eliminated the deficit reduction surtax, effective January 1, 2001. These rate reductions lower the value of exemptions and deductions, as well as those non-refundable tax credits whose values depend on a tax rate, in the year the change was introduced, but this is generally followed by growth in their value over time in line with increases in the size of incomes.

Table 1
Personal Income Tax Expenditures *(cont'd)*

	Estimates			Projections				
	1998	1999	2000	2001	2002	2003	2004	2005
				($ millions)				
Adult basic education – tax deduction for tuition assistance	-	-	-	-	10	5	5	5
Apprentice vehicle mechanics' tools deduction	-	-	-	-	10	10	10	10
Employment								
Deduction of home relocation loans	S	S	S	S	S	S	S	S
Tax-free amount for emergency service volunteers	14	14	14	14	14	14	14	14
Northern residents deductions	135	135	135	120	125	125	125	125
Overseas employment credit	62	53	38	38	39	39	40	40
Employee stock options[4]	215	295	690	650	275	270	270	270
Non-taxation of strike pay	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deferral of salary through leave of absence/sabbatical plans	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Employee benefit plans	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of certain non-monetary employment benefits	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Family								
Spouse or common-law partner credit[5]	1,100	1,125	1,235	1,215	1,270	1,310	1,375	1,430
Eligible dependant credit[5]	505	545	625	610	630	645	665	680
Infirm dependant credit[6]	7	7	5	10	10	10	10	10
Caregiver credit[6]	24	29	35	48	50	50	50	50
Canada Child Tax Benefit (CCTB)[7, 8]	5,625	5,930	6,610	7,370	7,935	8,255	8,755	9,315
Deferral of capital gains through transfers to a spouse, spousal trust or family trust	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Farming and fishing								
$500,000 lifetime capital gains exemption for farm property[9]	365	365	330	230	230	235	235	235
Net Income Stabilization Account[10]								
Deferral of tax on government contributions[11]	76	94	71	62	155	76	79	84
Deferral of tax on bonus and interest income[12]	30	35	33	29	24	35	39	43
Taxable withdrawals	-60	-100	-82	-72	-99	-98	-105	-120

Table 1
Personal Income Tax Expenditures ***(cont'd)***

	Estimates			Projections				
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
				($ millions)				
Deferral of income in drought regions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deferral of income from destruction of livestock	S	S	S	S	S	S	S	S
Deferral of income from grain sold through cash purchase tickets[13]	12	51	6	-23	19	12	14	16
Deferral of capital gains through 10-year reserve	S	S	S	S	S	S	S	S
Deferral of capital gains through intergenerational rollovers of family farms and commercial woodlots	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exemption from making quarterly tax instalments	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Cash-basis accounting	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Flexibility in inventory accounting	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Federal-provincial financing arrangements								
Quebec abatement	2,730	2,860	3,175	2,965	2,925	3,065	3,220	3,420
Transfer of income tax room to provinces	12,105	12,920	14,105	13,555	13,410	14,065	14,770	15,695
General business and investment								
Partial inclusion of capital gains[14]	935	970	2,510	1,855	1,930	2,020	2,085	2,175
Deduction of limited partnership losses	130	185	230	240	255	270	285	295
Investment tax credits	32	28	28	29	30	29	29	29
Deferral of capital gains through five-year reserve[15]	46	53	80	73	74	77	78	79
Deferral of capital gains through rollovers	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deferral through billed-basis accounting by professionals	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deduction of accelerated tax depreciation[16]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
$1,000 capital gains exemption on personal-use property	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
$200 capital gains exemption on foreign exchange transactions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Taxation of capital gains upon realization[17]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 1
Personal Income Tax Expenditures *(cont'd)*

	Estimates			Projections				
	1998	1999	2000	2001	2002	2003	2004	2005
	($ millions)							
Health								
Non-taxation of business-paid health and dental benefits	1,650	1,735	1,610	1,685	1,745	1,875	1,975	2,110
Disability tax credit (DTC)[18]	265	270	275	350	365	380	400	400
Child Disability Benefit[19]	-	-	-	-	-	25	50	50
Medical expense tax credit	405	495	550	575	600	645	670	695
Medical expense supplement for earners	26	34	42	53	57	59	63	67
Income maintenance and retirement								
Non-taxation of Guaranteed Income Supplement and spouse's allowance benefits	290	280	290	290	290	300	300	305
Non-taxation of social assistance benefits[20]	395	325	290	265	250	245	225	220
Non-taxation of workers' compensation benefits	620	635	665	640	665	705	725	760
Non-taxation of amounts received as damages in respect of personal injury or death	17	17	15	15	15	16	15	15
Non-taxation of veterans' allowances, civilian war pensions and allowances, and other service pensions (including those from Allied countries)	S	S	S	S	S	S	S	S
Non-taxation of veterans' disability pensions and support for dependants	155	160	135	130	130	130	130	130
Treatment of alimony and maintenance payments	215	170	170	170	170	170	170	170
Age credit	1,350	1,340	1,385	1,365	1,420	1,470	1,525	1,585
Pension income credit	405	415	425	405	415	425	435	440
Saskatchewan Pension Plan	S	S	S	S	S	S	S	S
Registered retirement savings plans (RRSPs)[21]								
Deduction for contributions	6,560	6,965	7,155	6,585	7,040	7,585	8,010	8,600
Non-taxation of investment income[22, 23]	6,145	8,820	5,460	5,235	5,445	6,020	7,005	7,615
Taxation of withdrawals	-2,795	-2,665	-3,515	-3,440	-3,700	-4,010	-4,260	-4,605
Net tax expenditure	9,910	13,120	9,100	8,380	8,785	9,595	10,755	11,610

Table 1
Personal Income Tax Expenditures ***(cont'd)***

	Estimates			Projections				
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
				($ millions)				
Registered pension plans (RPPs)[21]								
Deduction for contributions	4,490	5,030	4,895	4,440	4,480	4,550	4,515	4,570
Non-taxation of investment income[23]	11,445	17,285	10,420	9,830	9,790	10,325	11,415	11,795
Taxation of withdrawals	-5,985	-6,695	-6,695	-6,485	-6,895	-7,415	-7,790	-8,335
Net tax expenditure	9,950	15,620	8,620	7,785	7,375	7,460	8,140	8,030
Supplementary Information:								
Present value of tax assistance for retirement savings plans [24, 25]	7,510	8,245	8,100	7,455	7,930	8,145	8,415	8,810
Deferred profit-sharing plans	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of RCMP pensions/compensation in respect of injury, disability or death	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of up to $10,000 of death benefits	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of investment income on life insurance policies[26]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Small business								
$500,000 lifetime capital gains exemption for small business shares	650	685	745	470	475	485	485	495
Deduction of allowable business investment losses	61	62	39	37	38	39	39	40
Labour-sponsored venture capital corporations credit[27]	130	180	255	225	190	190	190	190
Deferral of capital gains through 10-year reserve	S	S	S	S	S	S	S	-8
Rollovers of investments in small businesses[28]	-	-	5	5	10	20	25	30
Federal tax credit for flow-through share investors[29]	-	-	17	31	42	46	49	-10
Other items								
Non-taxation of capital gains on principal residences[30]								
Partial inclusion rate	815	970	1,000	785	1,265	1,060	1,060	1,065
Full inclusion rate	1,080	1,295	1,530	1,575	2,530	2,120	2,120	2,130
Non-taxation of income from the Office of the Governor General	S	S	S	S	S	S	S	S

Table 1
Personal Income Tax Expenditures ***(cont'd)***

	Estimates			Projections				
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
				($ millions)				
Assistance for prospectors and grubstakers	S	S	S	S	S	S	S	S
Charitable donations credit	1,300	1,350	1,495	1,450	1,480	1,515	1,540	1,575
Reduced inclusion rate for capital gains arising from donations of publicly listed securities and ecologically sensitive land[31]	6	13	19	9	10	10	10	10
Political contribution tax credit[32]	10	10	19	13	13	14	17	17
Special tax computation for certain retroactive lump-sum payments[33]	S	S	S	S	S	S	S	S
Non-taxation of income of Indians on reserves	n.a.	n.a	n.a	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of gifts and bequests	n.a.	n.a	n.a	n.a.	n.a.	n.a.	n.a.	n.a.
Memorandum items								
Non-taxation of specified incidental expenses[34]	4	4	4	-	-	-	-	-
Non-taxation of allowances for diplomats and other government employees posted abroad	8	8	6	7	6	6	6	6
Child care expense deduction[35]	510	550	595	555	560	560	560	570
Attendant care expense deduction	S	S	S	S	S	S	S	S
Moving expense deduction	76	80	71	67	69	71	72	74
Deduction of carrying charges incurred to earn income	750	760	875	820	855	895	925	965
Partial deduction of meals and entertainment expenses	86	78	86	80	81	81	81	83
Deduction of farm losses for part-time farmers	59	62	59	53	54	55	57	57
Farm and fishing loss carry-overs	8	12	14	12	12	12	12	12
Capital loss carry-overs	145	190	225	180	185	190	195	200
Non-capital loss carry-overs	98	110	91	82	84	87	88	90
Logging tax credit	S	S	S	S	S	S	S	S
Deduction of resource-related expenditures	150	145	125	120	120	125	125	130
Reclassification of flow-through shares[36]	16	21	24	23	21	21	21	21
Deduction of other employment expenses	685	730	770	735	755	785	795	820
Deduction of union and professional dues	540	575	590	555	575	595	605	625

Table 1
Personal Income Tax Expenditures *(cont'd)*

	Estimates			Projections				
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
				($ millions)				
Employment insurance								
Employment insurance contribution credit	1,340	1,310	1,200	1,095	1,090	1,065	1,025	1,050
Non-taxation of employer-paid premiums	2,610	2,585	2,485	2,180	2,175	2,130	2,015	2,060
Canada and Quebec Pension Plans[37]								
Employee-paid premium credit	1,430	1,600	1,845	2,005	2,270	2,485	2,555	2,640
Non-taxation of employer-paid premiums[38]	2,235	2,520	2,845	3,050	3,450	3,790	3,840	3,970
Foreign tax credit	505	540	585	575	585	600	610	620
Dividend gross-up and credit	1,030	1,280	970	1,045	1,085	1,160	1,255	1,415
Supplementary low-income credit	135	135	-	-	-	-	-	-
Basic personal credit	18,120	19,390	21,065	20,515	21,370	22,035	22,970	23,780
Non-taxation of lottery and gambling winnings[39]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of capital dividends	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 1
Personal Income Tax Expenditures *(cont'd)*

Notes:

[1] The tax expenditure after 1999 reflects the reduction in the capital gains inclusion rate from three-quarters to two-thirds, effective February 28, 2000, and from two-thirds to one-half, effective October 18, 2000.

[2] The October 2000 *Economic Statement and Budget Update* increased the education credit to $400 per month for full-time students and $120 per month for part-time students, effective January 1, 2001. The 2001 budget introduced a measure that extends the education tax credit, beginning 2002, to people who receive taxable assistance for post-secondary education under certain government programs.

[3] The 2000 budget raised the exemption for scholarship, fellowship and bursary income, from $500 to $3,000 for students eligible for the education credit. In addition, for 2000 and later tax years, the tax expenditure reflects the additional funds made available to students under the Canada Millennium Scholarship Foundation.

[4] The 2000 budget increased the stock option deduction from one-quarter to one-third, effective February 28, 2000. The October 2000 *Economic Statement and Budget Update* further increased the stock option deduction from one-third to one-half, effective October 18, 2000. These changes are in line with the reductions to the capital gains inclusion rate. Increases in the tax expenditure for 2000 and 2001 reflect the higher value of stock option benefits due to the appreciation in the capital market, especially in the technology sector. Following the downturn in that sector, projections for 2002 onwards assume that the market will revert to its late 1990s level (i.e., the 1999 aggregate stock option deductions to which 2002, 2003, 2004 and 2005 tax structures are applied).

[5] The spouse or common-law partner credit was previously known as the spousal credit. The eligible dependant credit was previously known as the equivalent-to-spouse credit.

[6] The October 2000 *Economic Statement and Budget Update* increased the amount on which this credit is based from $2,386 to $3,500 for 2001.

[7] Payments are reported on a calendar year basis. The 2000 budget and the October 2000 *Economic Statement and Budget Update* fully indexed the CCTB starting January 2000, increased the per-child benefit amounts and the National Child Benefit (NCB) supplement and CCTB base benefit phase-out thresholds and, effective July 1, 2004, will reduce CCTB base benefit phase-out rates. The 2003 budget increased the NCB supplement, beyond indexation adjustments, by an annual amount of $150 per child in July 2003, $185 in July 2005 and $185 in July 2006.

[8] The projections for 2003 to 2005 do not include the projections for the Child Disability Benefit, which are shown separately.

[9] The 2000 budget reduced the capital gains inclusion rate from three-quarters to two-thirds for deposits on or after February 28, 2000. The October 2000 *Economic Statement and Budget Update* further reduced the capital gains inclusion rate from two-thirds to one-half, effective October 18, 2000. The decline in this tax expenditure after 1999 reflects, in part, reductions to the inclusion rate that reduce the value of the exemption.

[10] The data for the three tax expenditures under the Net Income Stabilization Account is observed up to 2002. Projections for 2003 and subsequent years are based on a historical average growth rate.

[11] The 2002 figure includes a one-time government contribution of $500 million.

[12] The decline in this tax expenditure for 2001 and 2002 is attributable to a drop in interest rates.

[13] Estimates are based on Statistics Canada data available up to 2002, which includes cash purchase tickets for wheat, barley, oats, canola, flax and rye. Projections after 2002 are calculated using a historical average growth rate.

[14] The 2000 budget reduced the capital gains inclusion rate from three-quarters to two-thirds, effective February 28, 2000. The October 2000 *Economic Statement and Budget Update* further reduced the capital gains inclusion rate from two-thirds to one-half, effective October 18, 2000. Increases in this tax expenditure after 1999 reflect reductions to the capital gains inclusion rate as well as anticipated increases in capital gains realizations resulting from changes to this measure.

[15] The estimates and projections for this tax expenditure are different from those in previous years' publications due to a change in methodology. Under the new methodology, average marginal tax rates have been used to determine the tax expenditure of the five-year reserve by comparing the average rate if all capital gains are taxed in the year of disposition versus the average rate if taxed as reserves. The tax expenditure for a particular year represents the difference in tax yield under these two scenarios.

Table 1
Personal Income Tax Expenditures *(cont'd)*

[16] Data for unincorporated businesses is not available to estimate this tax expenditure with precision.

[17] No data is available, as it is difficult to estimate the value of unsold assets.

[18] The 2000 budget enhanced the DTC by extending eligibility to individuals requiring extensive therapy and by expanding the list of relatives to whom the DTC can be transferred. The 2000 budget also provided a supplement of up to $500 for children eligible for the DTC. The October 2000 *Economic Statement and Budget Update* increased the amount on which the DTC is based from $4,293 to $6,000 effective 2001. Moreover, the 2003 budget announced an additional $80 million per year for persons with disabilities, but it is not taken into account in computing this tax expenditure as the Government has not yet determined how this amount will be spent.

[19] The Child Disability Benefit is delivered as a supplement to the Canada Child Tax Benefit.

[20] The decline in this tax expenditure after 1999 reflects changes in the 1998 to 2000 budgets and the October 2000 *Economic Statement and Budget Update* to reduce tax rates for low-income individuals (e.g., increases in the personal amounts and the reduction in the lowest tax rate).

[21] Estimates and projections may vary from those in last year's report due to changes in tax rates and projected levels of contributions, assets and withdrawals, and changes in methodology and assumptions. In particular, estimates of assets in trusteed RPPs used in this year's report are based on market values as reported by Statistics Canada (previous estimates were based on book values). The effect is to increase the tax expenditure associated with the tax foregone on the investment income earned on RPP assets, for both the 1998–2000 estimates and the 2001–2005 projections. In addition, the rate of return on RPP/RRSP assets for the 1998–2000 estimates is derived from actual levels of RPP/RRSP assets, contributions and withdrawals (the 10-year government bond rate was used for estimates in previous reports and continues to be used for the projections). This also has the effect of increasing the tax expenditure associated with the tax foregone on investment income earned on both RPP and RRSP assets. The use of market value RPP assets and the derived rate of return on both RPP and RRSP assets for the 1998–2000 estimates explain most of the differences between the estimates in this year's and last year's report.

[22] The 1999 RRSP assets are based on the estimate reported in Statistics Canada's Survey of Financial Security (SFS). The ratio of 1999 RRSP assets reported in the SFS to 1999 RRSP assets reported in the Statistics Canada publication *Pension Plans in Canada* is used to adjust RRSP assets for 1998 and 2000 to reflect the more comprehensive SFS estimate, which includes funds in self-administered plans (the ratio is $408 billion/$268 billion or 1.52).

[23] The increase in 1999 is attributable to a significantly higher rate of return on investment income in that year.

[24] The present-value estimates reflect the lifetime cost of a given year's contributions. This definition is different from that used for the cash-flow estimates and thus the two sets of estimates are not directly comparable. Further information on how these estimates are calculated is contained in the paper *Present-Value Tax Expenditure Estimates of Tax Assistance for Retirement Savings*, which was published in the 2001 edition of this report.

[25] The present-value tax expenditure projections presented in this year's report vary from those in previous reports due to changes in projected RPP/RRSP contribution levels and updated estimates of tax rates.

[26] Although this measure does provide tax relief for individuals, it is implemented through the corporate tax system. See under "interest credited to life insurance policies" in table 2 of this report for an estimate of the value of this tax expenditure.

[27] The projections of this tax expenditure for 2001 and 2002 are based on preliminary information on sales of shares of labour-sponsored venture capital corporations for those years. Projections assume sales remain constant after 2002.

[28] This provision was introduced in the 2000 budget. The October 2000 *Economic Statement and Budget Update* expanded this measure by increasing the size of small businesses eligible for the rollover. The 2003 budget eliminated the original investment and reinvestment limits and extended the time for acquiring eligible replacement shares. The tax expenditure for this measure is substantially lower than in previous editions. This reflects the reduction in gross capital gains that occurred as a result of the market downturn, and lower-than-expected take-up of the measure. A gradual increase in the tax expenditure is projected in later years due to the enhancements proposed in the 2003 budget, an improvement in market conditions leading to increases in realized capital gains and increased awareness of the measure.

Table 1
Personal Income Tax Expenditures ***(cont'd)***

[29] The estimates for this measure have been revised to reflect both recent data and announced changes to this measure in the 2003 budget. Recent data indicates that actual expenditure under the credit was below the level estimated in the previous report. The negative figure for 2005 reflects the inclusion in income for that year of an amount equal to the credit claimed in 2004. Any excess of deductions and credits claimed over the creditable expenditure incurred is required to be included in income in the following year. As an expenditure renounced pursuant to a flow-through share agreement is fully deductible, the following year's income will be increased by an amount equal to the tax credit.

[30] The declines in the tax expenditures in 2001 reflect the reduction in the capital gains inclusion rate from three-quarters to two-thirds, effective February 28, 2000, and from two-thirds to one-half, effective October 18, 2000. The increases in 2002 reflect a rise in the volume of home sales and in the average home value. The data used for this measure was available up to 2002.

[31] The reduced inclusion rate on donations of ecologically sensitive land and related easements, covenants and servitudes was introduced in 2000. Therefore, the data shown prior to 2000 reflect only donations of publicly traded securities. The data for the two measures cannot be separated in subsequent years. The tax expenditure shown includes only the impact of the reduced inclusion rate for capital gains arising from these donations; there is an additional revenue loss arising from the charitable donations credit. The decline in the tax expenditure from that in 2000 reflects both the decline in capital markets after that year and the reduction in the normal capital gains inclusion rate from three-quarters to one-half in 2000.

[32] Revisions to the Income Tax Act beginning in tax year 2000 increased the limit for the 75% tax credit from the first $100 contributed in a year to the first $200. The figures from 2000 onwards reflect these changes. The higher estimated value for 2000 also reflects evidence from historical data that the level of political contributions and the value of their tax expenditure increase in the year of a federal election. Also, effective January 1, 2004, the contributions eligible for the 75% credit rate will double from $200 to $400, with $200 increases in each of the higher brackets of contribution. The maximum allowable credit for any contribution of $1,275 or more will thereby be increased to $650. This change will apply to tax years ending after 2003. The change is reflected in the projections starting in 2004.

[33] Projections for this tax expenditure now incorporate tax filer data that only became available as of the 2000 taxation year.

[34] Allowances for members of Parliament and senators are no longer tax-exempt, effective January 2001.

[35] The 2000 budget increased the deduction limit from $7,000 to $10,000 for children eligible for the disability tax credit.

[36] This tax expenditure applies to a subset of resource-related deductions. Data was available for 1998 to 2001 on the volume of reclassified shares and was used to calculate 1998–2000 estimates and the 2001 projection. Due to volatility, the projections for 2002 to 2005 are based on a three-year historical average.

[37] This includes employee- and employer-paid premiums by and for self-employed workers.

[38] Prior to 2001, self-employed individuals could claim a non-refundable credit at the lowest marginal rate on the employer share of their Canada/Quebec Pension Plan contributions. For 2001 and subsequent years, self-employed individuals may deduct the employer share of their Canada/Quebec Pension Plan contributions paid for their own coverage. The estimates and projections shown are relative to a benchmark system in which no such deduction (or credit) is provided.

Table 1
Personal Income Tax Expenditures ***(cont'd)***

[19] A number of substantial methodological difficulties call into question the accuracy and utility of estimates of the revenue implications of non-taxation of lottery and gambling winnings. The first methodological difficulty is that the data on payouts/winnings is incomplete. There is solid information on aggregate payouts only for government-run lotteries and bingos. Data on payouts at casinos, video lottery terminals, horseracing, and racetrack slot machines, which constitute a rising share of total spending on gaming, is fragmentary. In addition, no data is available on the payouts/winnings from activities sponsored by charities and other non-government organizations. Second, even if complete information on aggregate payouts were available, the revenue implications of non-taxation still could not be determined with precision. For example, if the benchmark tax system were to include taxation of gambling and lottery winnings, consideration would have to be given to including a deduction for expenses incurred in earning this income, i.e. ticket purchases or wagers/losses. This deduction could be allowed either against all income or against only lottery and gambling winnings. A threshold below which winnings would not be taxable would also be necessary, due to the large administrative cost of taxing very small prizes. In the absence of information on the distribution of prizes and the incomes of winners, the resulting potential tax base is difficult to estimate. Further, it would be impractical to tax some forms of winnings (e.g. slot machines) because of the way in which prizes are paid out. For reference, estimates and projections of the tax expenditure associated with the non-taxation of lottery and gambling winnings presented in the 2002 publication as a memorandum item were as follows (in millions of dollars):

1997	1998	1999	2000	2001	2002	2003	2004
2,945	3,940	6,665	6,545	6,040	6,085	6,135	6,185

Another important point to note with respect to the non-taxation of lottery and gambling winnings is that under federal-provincial agreements negotiated in 1979 and 1985, the federal government, in exchange for an ongoing payment, undertook to refrain from re-entering the field of gaming and betting and to ensure that the rights of the provinces in that field are not reduced or restricted.

Table 2
Corporate Income Tax Expenditures*

	Estimates		Projections[1]					
	1998	1999[2]	2000	2001	2002	2003	2004	2005
	($ millions)							
Tax rate reductions								
Small businesses tax rate[3]	2,920	3,285	4,015	3,485	3,130	2,955	2,735	2,670
Manufacturing and processing allowance[4]	1,680	1,900	2,280	1,885	1,330	775	125	-
Low tax rate on general income of small businesses between $200,000 and $300,000[5]	-	-	-	55	70	35	5	-
Low tax rate for credit unions[6]	39	38	53	45	40	36	32	32
Exemption from branch tax for transportation, communications, and iron ore mining corporations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exemption from tax for international banking centres	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tax credits								
Investment tax credits								
Scientific research and experimental development investment tax credit	1,080	1,165	1,300	1,445	1,270	1,290	1,310	1,335
Atlantic investment tax credit	85	82	87	110	96	100	105	110
Investment tax credits carried back	60	15	53	37	42	44	45	46
Investment tax credits claimed in current year but earned in prior years	665	755	815	605	725	745	770	790
Mineral exploration tax credit[7]	-	-	-	-	-	25	28	39
Political contribution tax credit	S	S	S	S	S	S	S	S
Canadian film or video production tax credit	100	145	150	150	160	170	175	185
Film or video production services tax credit[8]	26	48	54	55	58	91	96	100

*** The elimination of a tax expenditure would not necessarily yield the full tax revenues shown in the table. See the publication *Tax Expenditures: Notes to the Estimates/Projections*, published in 2000 and available on the Department of Finance Canada Web site (www.fin.gc.ca), for a discussion of the reasons for this.**

Table 2
Corporate Income Tax Expenditures *(cont'd)*

	Estimates		Projections[1]					
	1998	**1999[2]**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
				($ millions)				
Exemptions and deductions								
Partial inclusion of capital gains[9]	1,205	1,035	2,010	3,445	2,335	2,295	2,250	2,240
Net impact of the resource allowance and the limited deductibility of Crown royalties and mining taxes[10]	40	40	79	48	100	105	78	65
Transitional arrangement for the Alberta Royalty Tax Credit	-	-	-	-	-	S	S	S
Earned depletion[11]	44	33	22	11	S	S	S	S
Deductibility of charitable donations[12]	245	235	275	220	205	210	220	225
Deductibility of gifts to the Crown	S	S	S	S	S	S	S	S
Deductibility of gifts of cultural property and ecologically sensitive land	5	5	5	5	5	5	5	5
Interest on small business financing loans	S	S	S	-	-	-	-	-
Non-deductibility of advertising expenses in foreign media[13]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of provincial assistance for venture investments in small business	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deferrals[14]								
Accelerated write-off of capital assets and resource-related expenditures	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Allowable business investment losses[15]	30	36	32	27	26	24	23	23
Holdback on progress payments to contractors[16]	47	35	35	35	35	35	35	35
Write-off of capital assets before available for use[17]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Capital gains taxation on realization basis[18]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Expensing of advertising costs[19]	24	23	32	32	32	32	32	32
Deductibility of contributions to mine reclamation and environmental trusts	S	S	S	S	S	S	S	S
Deductibility of countervailing and anti-dumping duties	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 2
Corporate Income Tax Expenditures ***(cont'd)***

	Estimates		Projections[1]					
	1998	1999[2]	2000	2001	2002	2003	2004	2005
			($ millions)					
Deductibility of earthquake reserves[20]	3	5	6	7	7	6	6	6
Cash-basis accounting	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Flexibility in inventory accounting	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deferral of income from grain sold through cash purchase tickets	5	20	5	-15	10	S	S	S
Deferral of income from destruction of livestock	S	S	S	S	S	S	S	S
Deferral through use of billed-basis accounting by professionals	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
International								
Non-taxation of life insurance companies' world income	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Exemptions from non-resident withholding tax[21]								
Dividends	190	215	205	230	210	250	285	310
Interest								
On deposits	405	410	500	360	330	360	385	395
On long-term corporate debt	145	150	130	125	115	125	135	135
Other[22]	355	360	385	385	355	385	415	425
Rents and royalties								
Copyright royalties	25	23	22	28	28	30	32	34
Royalties for the use of, or right to use, other property	17	21	20	35	36	38	40	43
Research and development royalties	S	S	S	S	S	S	S	S
Natural resource royalties	S	S	S	S	S	S	S	S
Rents from real property	S	S	S	S	S	S	S	S
Management fees	38	43	43	36	38	42	45	48
Estate or trust income	15	16	32	11	12	12	13	14
Exemption from Canadian income tax of income earned by non-residents from the operation of a ship or aircraft in international traffic	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 2
Corporate Income Tax Expenditures *(cont'd)*

	Estimates		Projections[1]					
	1998	1999[2]	2000	2001	2002	2003	2004	2005
				($ millions)				
Other items								
Transfer of income tax room to provinces	895	935	1,160	1,145	1,090	1,185	1,300	1,355
Interest credited to life insurance policies	97	98	91	66	68	69	71	73
Non-taxation of registered charities	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of other non-profit organizations	75	83	90	89	83	79	75	79
Income tax exemption for provincial and municipal corporations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-taxation of certain federal Crown corporations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Aviation fuel excise tax rebate[23]	n.a.	n.a.	n.a.	-	-	-	-	-
Surtax on the profits of tobacco manufacturers	-74	-70	-63	-80	-85	-85	-85	-85
Temporary tax on the capital of large deposit-taking institutions[24]	-60	-58	-48	-	-	-	-	-
Memorandum items								
Refundable taxes on investment income of private corporations								
Additional Part I taxes[25]	-580	-525	-670	-605	-700	-905	-1,195	-1,360
Part IV tax	-1,955	-1,515	-1,790	-1,710	-1,660	-1,755	-1,960	-2,130
Dividend refund	3,345	2,885	3,360	3,050	2,925	3,095	3,460	3,750
Net	810	845	900	735	565	435	305	260
Refundable capital gains for investment corporations and mutual fund corporations[26]	560	425	630	475	465	450	430	465
Loss carry-overs[27]								
Non-capital losses carried back	1,400	1,090	1,070	1,350	1,420	1,370	1,300	1,375
Non-capital losses applied to current year	2,625	3,450	3,410	2,995	3,245	3,245	3,300	3,260
Net capital losses carried back	160	125	145	160	165	155	125	100
Net capital losses applied to current year	360	475	605	530	320	315	310	305
Farm losses applied to current year	16	16	18	19	18	18	18	19

Table 2
Corporate Income Tax Expenditures ***(cont'd)***

	Estimates		Projections[1]					
	1998	**1999[2]**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
			($ millions)					
Partial deduction of meals and entertainment expenses[28]	285	300	325	310	305	295	290	305
Large corporations tax								
Threshold[29]	555	570	600	615	625	640	825	725
Exempt corporations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Patronage dividend deduction	185	205	225	235	235	230	225	245
Logging tax credit	28	46	37	25	26	27	29	30
Deductibility of provincial royalties (joint venture payments) for the Syncrude project (remission order)[30]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deductibility of royalties paid to Indian bands	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non-resident-owned investment corporation (NRO) refund[31]	210	230	280	280	280	280	-	-
Investment corporation deduction[32]	S	S	S	S	S	S	S	S
Deferral through capital gains rollovers[33]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Deduction for intangible assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tax exemption on income of foreign affiliates of Canadian corporations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 2
Corporate Income Tax Expenditures *(cont'd)*

Notes:

[1] Unless otherwise indicated in the footnotes, changes in the projections from those in last year's edition of this document result from changes in the explanatory economic variables upon which the projections are based. Projections for 2001 and subsequent years reflect the impact of the reduction in the benchmark resulting from the change in the general corporate income tax rate from 28% to 27% on January 1, 2001, 25% on January 1, 2002, 23% on January 1, 2003, and 21% on January 1, 2004. The corporate surtax raises these rates by 1.12 percentage points.

[2] 1999 estimates are based on preliminary data.

[3] The increase from 1998 to 2000 is attributable to a large increase in taxable income during this period. The reduction starting in 2001 results from reductions in the benchmark rate and a lower growth track for projected taxable income. Projections for 2003 and subsequent years also reflect the impact of the 2003 budget proposal to increase the amount of income eligible for the small business deduction from $200,000 to $225,000 in 2003, $250,000 in 2004, $275,000 in 2005, and $300,000 in 2006.

[4] Although this tax expenditure will be effectively eliminated on January 1, 2004, when the general corporate income tax rate is reduced to 21%, many firms reporting income in the 2004 taxation year will earn a portion of that income in the 2003 calendar year, before the tax expenditure is effectively eliminated.

[5] This measure was announced in the 2000 budget and became effective January 1, 2001. On that date the general federal corporate income tax rate on income between $200,000 and $300,000 earned by a Canadian-controlled private corporation from an active business carried on in Canada was reduced to 21%. The lower rate on the general income of small businesses and the change in the general federal tax rate effective January 1, 2001, only partially affect the projection for tax year 2001 since many firms reporting income in the 2001 tax year earned a portion of that income in the 2000 calendar year, before the rate reductions were introduced. Subsequent declines in the tax expenditure are a result of the reduction in the general corporate income tax rate and the increase, announced in the 2003 budget, in the amount of income eligible for the small business deduction. This measure is effectively eliminated on January 1, 2004, when the general corporate income tax rate is reduced to 21%. Some tax expenditure occurs in 2004, however, as many firms reporting income in the 2004 tax year will earn a portion of that income in the 2003 calendar year.

[6] Credit unions are eligible for the lower federal tax rate of 12% provided to small businesses.

[7] This tax credit was introduced in the 2003 budget and applies to 2003 and subsequent tax years. It is phased in starting at 5% in 2003, 7% in 2004 and 10% in subsequent years.

[8] Projections for 2003 and subsequent years reflect the impact of the 2003 budget proposal to increase the rate of the credit from 11% to 16%.

[9] The increase in 2000 and 2001 reflects a projected increase in capital gains and the reduction in the capital gains inclusion rate from three-quarters to one-half during 2000. The reduction after 2001 reflects a projected decrease in capital gains as well as the reduction in corporate income tax rates.

[10] The tax expenditure is calculated as the revenue cost of the resource allowance net of non-deductible Crown royalties and provincial mining taxes. Budget 2003 proposed changes to the income taxation of the resource sector to be phased in over a five-year period, including the reduction in the corporate statutory rate for income tax applying to income earned from resource activities, the deductibility of royalties and the elimination of the resource allowance, commencing in 2003. During the transition period 2003-2007, the determination of the tax expenditure reflects both the declining tax rate for the resource sector and the proportions of the resource allowance and non-deductible Crown royalties and provincial mining taxes to be established in legislation, so that, by 2007, this tax expenditure amount is effectively reduced to zero. See the technical paper *Improving the Income Taxation of the Resource Sector in Canada*, Department of Finance Canada, March 2003, for further details.

[11] Additions to depletion pools were eliminated as of January 1, 1990. As a result, the declining value of this tax expenditure reflects the fact that these pools are being drawn down, albeit subject to successor rule limitations where applicable.

[12] The decline in the tax expenditure in 2001 results from the reduction in the benchmark rate and a decline in the projected taxable income.

[13] The non-deductibility of advertising expenses in foreign media represents a negative tax expenditure since the deduction of an expense incurred to earn income is denied.

[14] The tax measures in this section allow a deferral of income taxes from the current to a later tax year. The publication *Tax Expenditures: Notes to the Estimates/Projections* provides details on each deferral item.

Table 2
Corporate Income Tax Expenditures *(cont'd)*

[15] The amount of this tax expenditure can fluctuate from year to year depending upon the amount of current-year losses and the availability of income against which to apply these losses.

[16] The amount of this tax expenditure can fluctuate significantly from year to year depending primarily upon the level of construction activity. Therefore, it is projected at its historical average.

[17] This item is referred to as "Available for use" in the publication *Tax Expenditures: Notes to the Estimates/Projections*.

[18] The tax deferral associated with taxation of capital gains upon disposition of property, rather than on an accrual basis, represents a deviation from the benchmark tax system and is therefore a tax expenditure.

[19] The amount of this tax expenditure can fluctuate significantly from year to year depending upon advertising expenses claimed. Therefore, it is projected at its historical average.

[20] This measure was introduced in 1998. The numbers are now based on data for 1998, 1999 and 2000 received from the Office of the Superintendent of Financial Institutions.

[21] Estimates and projections were computed on the basis of an analysis of payments to non-residents and withholding tax collections available for 1999, 2000 and 2001, the last three years for which complete data is available. Figures for 1998 and from 2002 to 2005 are, respectively, backward estimates and forward projections based on the 1999 to 2001 estimates and projections.

[22] This category includes interest paid to non-resident persons or organizations that would be exempt from income tax in Canada were they residents in Canada. Also included is interest paid under certain securities-lending arrangements exempt under subparagraph 212(1)(b)(xii) of the Income Tax Act, and interest exempt under certain other domestic and treaty provisions.

[23] The aviation fuel excise tax rebate, which was effective for calendar years 1997 to 2000, provided an excise tax rebate on the aviation fuel used by airline companies. The rebate was limited to $20 million per year per associated group of companies. In order to receive a rebate, a company had to agree to reduce its income tax losses by $10 for every $1 of rebate.

[24] This measure was first introduced in the 1995 budget and extended in subsequent budgets. The temporary tax was not extended beyond its scheduled expiry date of October 31, 2000.

[25] This item includes the additional 6 2/3% refundable tax on investment income as well as, for years after 2000, the Part I tax paid on investment income in excess of the benchmark rate. The increase after 2001 results from the increase in the difference between the Part I tax on investment income and the benchmark rate.

[26] The larger amounts in 1998 and 2000 are due to a significant increase in the capital gain dividends distribution. The projections are lower after 2000 due to the phased-in reductions in the general corporate income tax rate and the reduction in the capital gains inclusion rate.

[27] The impact of loss carry-overs can fluctuate significantly from year to year depending upon the amount of current and prior years' losses and the availability of income against which to apply these losses.

[28] Half of these expenses are deductible for income tax purposes, given that a portion of meal and entertainment expenses is incurred to earn income, and is therefore a legitimate business expense, while the remaining portion reflects personal consumption. The estimates and projections provided reflect the additional tax revenue that would be received if no deduction were allowed (i.e., that there is no business purpose to the expenditure).

[29] The estimates are higher in 2004 to take into account the increase in the capital deduction from $10 million to $50 million. Estimates afterward are lower, reflecting the reduction in the federal capital tax rate. Both measures were announced in the 2003 federal budget.

[30] The cost of the Syncrude Remission Order ("Order Respecting the Remission of Income Tax for the Syncrude Project," P.C. 1976-1026, May 6, 1976 [C.R.C. 1978 Vol. VII, c. 794]) is published annually in the Public Accounts of Canada (ISBN 0-660-177792-7).

Table 2
Corporate Income Tax Expenditures *(cont'd)*

[31] Bill C-22 (An Act to Amend the Income Tax Act and Related Statutes), which contained an amendment to repeal the NRO provisions for elections made after February 27, 2000, received Royal Assent on June 14, 2001 [S.C. 2001, c. 17, s. 131]. To allow for an orderly restructuring of their operations, existing NROs are entitled to retain their status until the end of their last tax year that begins before 2003. However, existing NROs are not allowed to issue new shares, other than by way of reorganization, or increase debt levels, to finance new investments, subject to grandfathering of arrangements in writing entered into before February 28, 2000.

[32] This measure allows a public corporation that qualifies as an investment corporation to benefit from elements of the integration system, which are usually available only to private corporations.

[33] The taxation of capital gains is affected by provisions that permit taxpayers to defer realization for tax purposes through various rollover provisions. Since the benchmark tax structure includes various rollover provisions that permit the deferral of capital gains when a corporate structure is changed, this item is identified separately for information purposes.

Table 3
GST Tax Expenditures*

	Estimates				Projections			
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
	($ millions)							
Zero-rated goods and services								
Basic groceries[1]	2,930	3,045	3,180	3,355	3,515	3,710	3,935	4,140
Prescription drugs[1]	265	285	300	320	335	355	375	395
Medical devices[1]	100	110	115	125	130	135	145	150
Agricultural and fish products and purchases	S	S	S	S	S	S	S	S
Certain zero-rated purchases made by exporters	S	S	S	S	S	S	S	S
Non-taxable importations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Zero-rated financial services	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tax-exempt goods and services								
Residential rent (long-term)[1]	1,165	1,155	1,150	1,175	1,245	1,325	1,405	1,475
Health care services[1]	475	475	495	530	555	590	625	660
Education services (tuition)[1, 2]	330	370	395	415	435	460	490	515
Child care and personal services[1]	140	140	140	140	150	155	165	175
Legal aid services	20	20	20	20	25	25	25	30
Ferry, road and bridge tolls[1]	5	5	10	10	10	10	15	15
Municipal transit[1]	80	85	95	90	95	100	110	115
Exemption for small businesses	125	135	145	155	165	175	185	195
Water and basic garbage collection services[1, 3]	130	135	140	150	155	160	175	180
Domestic financial services	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Certain supplies made by non-profit organizations	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

*** The elimination of a tax expenditure would not necessarily yield the full tax revenues shown in the table. See the publication *Tax Expenditures: Notes to the Estimates/Projections*, published in 2000 and available on the Department of Finance Canada Web site (www.fin.gc.ca), for a discussion of the reasons for this.**

Table 3
GST Tax Expenditures *(cont'd)*

	Estimates				Projections			
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
	($ millions)							
Tax rebates[4]								
Housing rebate[5]	500	550	580	630	750	835	890	965
New residential rental property rebate[6]	-	-	25	40	50	55	60	65
Rebate for book purchases made by qualifying institutions	30	30	30	30	30	35	35	35
Rebate for foreign visitors on accommodations[7]	75	80	80	80	80	80	85	90
Rebates for municipalities[8, 9]	575	615	645	695	695	695	695	695
Rebates for hospitals[8, 9]	270	315	340	390	390	390	390	390
Rebates for schools[8, 9]	310	335	350	375	375	375	375	375
Rebates for universities[8, 9]	120	135	150	180	180	180	180	180
Rebates for colleges[8, 9]	55	60	65	80	80	80	80	80
Rebates for registered charities[8]	170	190	210	230	245	255	265	275
Rebates for non-profit organizations[8]	45	50	55	55	60	60	65	65
Rebates for Aboriginal self-government[8, 10]	S	S	S	S	S	S	S	S
Tax credits								
GST credit[11]	2,925	2,915	2,965	3,005	3,095	3,195	3,280	3,385
Memorandum items								
Quick method accounting	165	175	190	195	205	215	225	240
Meals and entertainment expenses[12]	120	120	130	135	140	145	155	160
Rebate to employees and partners[13]	80	90	105	105	105	110	110	110
Residential and other personal-use real property	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Table 3
GST Tax Expenditures *(cont'd)*

Notes:

[1] The national GST base model used to generate these estimates and projections has been updated and is now based on the 1999 national input-output tables from Statistics Canada and the latest release of the National Income and Expenditure Accounts. In some cases, these updates cause significant changes in the estimates and projections, relative to numbers published in preceding publications.

[2] This tax expenditure was revised upward as a result of a change in National Accounts methodology.

[3] The upward revisions are based on more recently available municipal data used in the national input-output tables.

[4] Rebates paid to governments are not recorded as tax expenditures—the Crown's constitutional immunity from taxation is part of the benchmark tax system.

[5] The housing rebate is based on information provided by Statistics Canada. Revisions from 2002 forward reflect increased investment activity in residential construction.

[6] The new residential rental property rebate was introduced in the 2000 budget for new construction or substantial renovations commencing after February 27, 2000.

[7] The methodology for estimating this tax expenditure, which was derived as part of a review of the Visitor Rebate Program conducted during 1997, has been updated to reflect more recent information.

[8] The public sector body rebates are based on Canada Customs and Revenue Agency administrative data. In some cases, the use of more recent administrative data leads to revisions of these rebates.

[9] Since the value of these rebates is influenced by provincial budgetary decisions, the projected values for the relevant years are simply the values estimated for 2001.

[10] These rebates are offered to Aboriginal governments that have an agreement providing for a GST refund for goods and services acquired for self-government activities. The rebates are based on Canada Customs and Revenue Agency administrative data.

[11] Estimates and projections are based on personal income tax data.

[12] The numerical approach used to derive the tax expenditure figures is tightly integrated with the tax expenditure estimates and projections reported for the personal and corporate income tax system.

[13] This item includes the apprentice vehicle mechanics' tools deduction.

APPENDIX: DESCRIPTION OF TAX EXPENDITURES INTRODUCED SINCE 2000

All tax provisions introduced since *Tax Expenditures: Notes to the Estimates/Projections* was published in September 2000 are described below.

Personal Income Tax

Education

Apprentice Vehicle Mechanics' Tools Deduction

Objective: To allow apprentice vehicle mechanics to deduct from their income the extraordinary portion of the cost of new tools they have to provide as a condition of their on-the-job training. (*The Budget Plan*, 2001)

Starting in 2002, apprentice vehicle mechanics can deduct the extraordinary portion of the cost of new tools they purchase in the taxation year or in the last three months of the previous taxation year if the apprentice is in his or her first year.

In order to be eligible, the apprentice must be registered with a provincial or territorial body in a program leading to designation as a mechanic licensed to repair automobiles, aircraft or any other self-propelled motorized vehicle.

The eligible deduction is the portion of tool costs that exceed $1,000 or 5% of the individual's apprenticeship income for the year, whichever is greater. Any part of the eligible deduction that is not taken in the year can be carried forward and deducted in subsequent taxation years. The apprentice's employer must certify that the tools are required as a condition of, and for use in, the apprenticeship.

The cost of the individual's tools for other income tax purposes is the acquisition cost less the deductible portion of that cost. If an individual (or a non-arm's-length person) disposes of the tools for proceeds in excess of this reduced cost, the excess amount is included in income in the year of disposition. However, tools are eligible for the existing rollovers that apply to transfers of property to a corporation or a partnership.

The individual is also eligible for a rebate of the goods and services tax/harmonized sales tax paid on the portion of the purchase price of the new tools that is deducted in computing employment income.

These measures apply to the 2002 and subsequent taxation years.

Adult Basic Education—Tax Deduction for Tuition Assistance

Objective: To provide a taxable income deduction for tuition fees for adult basic education. (*The Budget Plan*, 2001)

Individuals may deduct, in computing their taxable income, the amount of tuition assistance received for adult basic education or other programs that are ineligible for the tuition tax credit, to the extent that this assistance has been included in their income. In order to be eligible, the tuition assistance must be provided under:

- Part II of the Employment Insurance Act (or a similar program provided by a province or territory under a Labour Market Development Agreement); or
- another training program established under the authority of the Minister of Human Resources Development, such as the Employability Assistance for People with Disabilities initiative or the Opportunities Fund for Persons with Disabilities.

This measure was made retroactive to 1997 and subsequent taxation years.

Employment

Canada and Quebec Pension Plan Deduction for the Self-Employed (now included in memorandum items under "non-taxation of employer-paid premiums")

Objective: This measure ensures that self-employed individuals are not disadvantaged relative to an owner-operator who is also an employee of the corporation. (*Economic Statement and Budget Update*, October 2000)

Under the Canada Pension Plan and Quebec Pension Plan (C/QPP), self-employed individuals are required to pay both the employer and employee portion of C/QPP contributions. As of January 1, 2001, self-employed individuals are permitted to deduct the portion of C/QPP contributions that represent the employer's share.

Farming and Fishing

Deferral of Capital Gains Through Intergenerational Rollovers of Family Farms and Commercial Farm Woodlots

Objective: To facilitate intergenerational rollovers of commercial woodlot operations that are farming. (*The Budget Plan*, 2001)

A taxpayer may make an intergenerational transfer of farm property in Canada on an income-tax-deferred rollover basis, if the property was principally used in a farming business in which the taxpayer or a family member was actively engaged on a regular and continuous basis. Similar rules apply to intergenerational transfers of shares of family farm corporations and interests in family farm partnerships.

The operation of a commercial woodlot may, in certain circumstances, constitute a farming business. However, the intergenerational rollovers are generally not available for commercial woodlots because, aside from monitoring, the management of a woodlot may not demand regular and continuous activity. As a result, many commercial woodlot owners are subject to income tax on intergenerational transfers of their woodlots. This can be detrimental to the sound management of the resource if woodlots are harvested prematurely to pay the tax.

Where the regular and continuous activity test set out in the existing rollover rules cannot be met, a new test will be implemented strictly for the purpose of applying those rules to commercial woodlot operations. The new test allows an intergenerational rollover where the conditions of the existing rollover rules are otherwise met and the transferor or a family member is actively involved in the management of the woodlot to the extent required by a prescribed forest management plan.

This measure applies to transfers that occur after December 10, 2001.

Health

Child Disability Benefit

Objective: To assist low- and modest-income families with the extra expenses associated with the care of a child with a disability. (*The Budget Plan*, 2003)

In recognition of the special needs of low- and modest-income families with a child with a disability, the 2003 budget introduced a $1,600 Child Disability Benefit (CDB). The CDB will be a supplement of the CCTB and will be paid for children who meet the eligibility criteria for the disability tax credit (DTC).

The full $1,600 CDB will be provided for each eligible child to families having a net income below the amount at which the National Child Benefit (NCB) supplement is fully phased out (i.e., $33,487 in July 2003 for families having three or fewer children). Beyond that income level, the CDB will be reduced based on family income at the same rates as the NCB supplement. For the 2003–2004 benefit year, benefits will be reduced by 12.2% for one child with a disability, 22.7% for two children with disabilities, and 32.6% for three or more children with disabilities. The CDB amount and income thresholds will be indexed to inflation.

The CDB was effective in July 2003 but will become payable and be included with the CCTB payment starting in March 2004. Accordingly, in March 2004 eligible families will receive a retroactive payment for the July 2003 to March 2004 period.

Families will continue to be able to claim the DTC and the DTC supplement for children with disabilities. For example, in 2003, a one-earner family with one child with a severe disability and an income of $30,000 will receive $1,600 from the CDB, plus a tax reduction of $1,591 under the DTC and DTC supplement for children, for a total of $3,191.

Small Business

Federal Tax Credit for Flow-Through Share Investors

Objective: To promote mineral exploration activity, particularly in rural communities across Canada that depend on mining. (*Economic Statement and Budget Update*, October 2000)

This temporary investment tax credit is available to individuals (other than trusts) at a rate of 15% of specified surface "grass roots" mineral exploration expenses incurred in Canada pursuant to a flow-through share agreement.

The credit applies to eligible expenditures incurred by a corporation before 2005 and renounced to an individual pursuant to a flow-through share agreement. The credit also applies to eligible expenditures incurred by a corporation before 2006 that are deemed to have been incurred by a flow-through share investor under the "look-back" rule. The look-back rule allows a corporation that incurs expenses in a given calendar year to renounce those expenses to a flow-through share investor, effective as of the last day of the preceding year.

The flow-through share investor is entitled to use this tax credit to reduce federal personal income tax otherwise payable. This non-refundable credit will reduce the cumulative Canadian exploration expense pool of investors in the years following the year in which it is claimed.

Corporate Income Tax

Mineral Exploration Tax Credit

Objective: This tax credit is part of a package of income tax changes that will improve the international competitiveness of the resource sector and promote the efficient development of Canada's natural resource base. (News Release: *Finance Minister Tables Notice of Ways and Means Motion to Implement Resource Sector Tax Changes Announced in Budget 2003*, June 9, 2003)

The Government proposes to introduce a 10% tax credit for qualifying mineral exploration expenses. The new credit will apply to exploration and pre-production development expenditures for diamonds and base or precious metals. The new tax credit will be available only to corporations, and will be neither refundable nor transferable under a flow-through share agreement. The new corporate mineral tax credit will apply in respect of eligible expenditures made on or after January 1, 2003, at a rate of 5%. The rate will rise to 7% on January 1, 2004, and will be fully phased in at a 10% rate on January 1, 2005.

Transitional Arrangement for the Alberta Royalty Tax Credit

Objective: This transitional arrangement for smaller oil and gas producers is part of a package of income tax changes that will improve the international competitiveness of the resource sector and promote the efficient development of Canada's natural resource base. (News Release: *Finance Minister Tables Notice of Ways and Means Motion to Implement Resource Sector Tax Changes Announced in Budget 2003*, June 9, 2003)

Under the new resource tax structure, which allows deductibility of royalties and mining taxes, it is appropriate to deduct only the amount of Crown royalties or mining taxes actually paid. The Province of Alberta refunds a minimum of 25% of the first $2 million in Alberta Crown royalties paid by corporate groups, under the Alberta Royalty Tax Credit (ARTC) program. Under the new structure for resource taxation, refunds provided under the ARTC will reduce the amount of Crown royalties deductible or be included in income if the taxpayer has already deducted Crown royalties that include the refund. The transitional arrangement will reduce, during a 10-year transitional phase-in period, the portion of the refund that reduces deductible royalties or that must be included in income for tax purposes. Specifically, only half of the ARTC will reduce royalties or be included in computing income for tax purposes for calendar years 2003 through 2007. For years 2008 through 2012, the rate will increase by 10 percentage points per year to 100% in 2012.

The transitional measure will be available in full to individuals who receive the ARTC, and to taxable Canadian corporations that pay no more than $2 million in Alberta Crown royalties, as defined for ARTC purposes. For corporations that pay more than $2 million in Alberta Crown royalties, the benefit of the transitional arrangement will be reduced on a straight-line basis, such that the benefit of the additional transition is completely removed for corporate groups that pay $5 million or more of Alberta Crown royalties.

PART 2

TAX EVALUATIONS AND RESEARCH REPORTS

LONG-RUN PROJECTIONS OF THE TAX EXPENDITURE ON RETIREMENT SAVINGS

1. INTRODUCTION

The aging of the Canadian population and the movement of the baby boom cohorts into their retirement years will increase pressures on government spending in areas such as health care and the Old Age Security and Guaranteed Income Supplement programs (OAS/GIS). Governments have responded by improving their fiscal positions not only to address immediate problems but to begin to prepare for these pressures.

Population aging will not have only negative effects on governments' fiscal balances, however. The shift of the baby boom cohorts into retirement will reduce the cash-flow tax expenditure cost of registered pension plans (RPPs) and registered retirement savings plans (RRSPs) as taxable withdrawals from the plans grow faster than tax-deductible contributions. Some analysts have projected tax expenditure declines sufficient to offset a large portion of the expected increases in health and public pension costs.

In this context, this paper analyzes the determinants of the tax expenditure cost of RPP and RRSP saving and projects the cost to 2041 under a variety of assumptions. While considerable uncertainty must be attached to any long-run projection, the general conclusion of the paper is that the tax expenditure cost will likely decline but that the reduction in the tax expenditure may be small in relation to the projected increases in health and public pension costs.

Background

Canada provides favourable tax treatment for saving in RPPs, RRSPs and deferred profit-sharing plans. Contributions to these plans are deductible from taxable income and investment income earned inside them is tax-exempt, while benefits paid out of them are taxable. In this way, income set aside for retirement is taxed when it is received rather than when it is saved. This deferral of tax has the same effect as a complete exemption of tax on the investment income earned on a non-deductible investment (see example in Appendix A). Where the taxpayer faces a lower marginal tax rate in retirement than while saving, an additional "income-averaging" benefit is provided.

The Department of Finance Canada currently publishes two annual estimates of the tax expenditure on saving in RPPs and RRSPs. The *cash-flow* tax expenditure measures the amount of revenue foregone in the current year due to the tax treatment—that is, the amount of additional revenue that would be collected in the year if the tax preference were eliminated without any change in the pre-tax flow of funds into and out of the plans.

It is calculated as: (a) the tax foregone on income contributed to the plans *plus* (b) the tax foregone on investment income in the plans *less* (c) the tax collected on benefits paid out of the plans. This tax expenditure varies with short-term conditions such as the prevailing rate of return on investment as well as longer-term factors such as the maturity of the pension system and demographic trends that affect contribution and benefit levels.

Because of the variability of this cash-flow measure and because it does not reflect the eventual taxation of the deferred income, the Department of Finance Canada has begun to supplement it with a *present-value* tax expenditure estimate. This is a measure of the lifetime cost to the Government of the RPP and RRSP contributions made in a year. It is equal to: (a) the current cost of the deduction provided for the contributions *plus* (b) the discounted cost of the tax foregone on the investment income earned on the contributions *less* (c) the discounted value of the taxes collected on pension benefits and RRSP withdrawals derived from the contributions and associated investment income.

It is the *cash-flow* tax expenditure that best measures the effect of the tax provisions on the fiscal position of governments as the pension system evolves over time with an aging population.

Some analysts have pointed out that the uncollected tax on RPP and RRSP balances could be treated as an asset of governments and that governments will see fiscal gains as the aging of the baby boomers brings an acceleration of withdrawals from the plans.[1 2 3] The projected declines in the tax expenditure appear sufficient to offset much of the

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[1] Robbins and Veall have provided an estimate of $200 billion for the present value of the future stream of personal income tax revenues attributable to RPP and RRSP accumulations existing in 1999. (Jenna Robbins and Michael R. Veall, "Future Taxes on Pension Savings as a Government Asset," C.D. Howe Institute backgrounder, No. 63, October 2002.)

[2] Marcel Mérette has simulated future savings flows and projected a decline in the cash-flow tax expenditure for the federal and provincial governments together from about 3.5% of gross domestic product (GDP) in 2001 to about –1.5% of GDP in 2043. This corresponds to a drop in the federal tax expenditure from 2.3% to –1.0%. In 2001 dollars, a reduction of 3.3% of GDP in the federal tax expenditure implies a fiscal gain of $36 billion. (Marcel Mérette, "The Bright Side: A Positive View on the Economics of Aging," Institute for Research on Public Policy, *Choices*, Vol. 8, No. 1, March 2002. The tax expenditure estimates are taken from the baseline projection presented in Figure 4.)

[3] Robert Brown has projected a decline in the federal tax expenditure, expressed in 1991–1995 dollars, from $14.6 billion in 2001 to –$15.5 billion in 2041. Note that Brown excludes a portion of the tax expenditure as normally calculated, namely the foregone tax on investment income earned by seniors. This reduces the tax expenditure and increases the extent of its decline as the population ages. (Robert L. Brown, "Paying for Canada's Aging Population: How Big Is the Problem?", Canadian Institute of Actuaries Member's Paper, March 2002, and "An Argument for Higher RRSP Limits," *Benefits Canada*, September 2002.)

increase in health and public pension costs that is projected to accompany the aging of Canada's population over the next 40 years.[4]

Given the potential importance of these fiscal effects, the aim of this paper is to examine closely the determinants of the tax expenditure and to provide projections of it to 2041 using the best available data. The paper proceeds as follows. Section 2 explores the relationship of the tax expenditure to economic variables and other trends using simplified models of the population of retirement savers. Section 3 outlines the data, assumptions and methods employed in our tax expenditure projections. Section 4 provides the results of our simulations, using various assumptions with respect to key parameters. Section 5 concludes.

2. Simple Models of the Tax Expenditure

The cash-flow tax expenditure, TE_t, for year t may be expressed as

$$TE_t = m_C C_t + m_A i A_{t-1} - m_B B_t \tag{1}$$

where C_t and B_t are contributions to and benefits paid out of RPPs and RRSPs in year t, A_{t-1} is the level of assets in the plans at the end of the previous year, i is the nominal pre-tax rate of return on plan assets in the year and m_C, m_A and m_B are the average marginal tax rates applicable to contributions, investment income and benefits (with i and m assumed constant over time).[5]

The formula makes it evident that changes in the level of the tax expenditure over time depend primarily on differences in the growth patterns of contributions, assets and benefits. While any change in the level of the tax expenditure affects the fiscal balance, it is of particular interest to see what is needed to produce a negative value of TE_t. To begin with, it is clear that simply having a higher level of benefits than contributions is not sufficient. For $TE_t < 0$, the tax collected on benefits must exceed the foregone tax on both contributions and asset income.

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[4] See, for example, Harriet Jackson and Chris Matier (JM), *Public Finance Implications of Population Ageing: An Update*, Department of Finance Canada, Economic and Fiscal Policy Working Paper No. 2003-03, available at www.fin.gc.ca, and Chief Actuary, Office of the Superintendent of Financial Institutions, *Actuarial Report (5th) on the Old Age Security Program as at 31 December 2000*, May 7, 2002, available at www.osfi-bsif.gc.ca. In the JM projections, which assume that age-specific per capita costs rise in line with wage growth, population aging raises public spending on health care by 3.0 percentage points of GDP by 2041 and OAS/GIS costs by 2.4 percentage points. In the Chief Actuary's projections, which assume slower growth in age-specific benefits, population aging increases OAS/GIS costs by about 0.7% of GDP. From these projections, population aging may increase health and OAS/GIS costs by between 3.7% and 5.4% of GDP by 2041. In 2001 dollars, the range of increases is $40 billion to $59 billion.

[5] Use of the nominal interest rate reflects the fact that nominal income, rather than real income, is used as the benchmark tax base in the annual tax expenditure reports.

Further general information on the relationships can be obtained by making the simplifying assumption of a single marginal tax rate, $m_C = m_A = m_B = m$. With this assumption, and noting that

$$A_t = (1+i)A_{t-1} + C_t - B_t \qquad \text{or} \qquad A_t - A_{t-1} = iA_{t-1} + C_t - B_t \tag{2}$$

the tax expenditure may be written as

$$TE_t = m(A_t - A_{t-1}). \tag{3}$$

This tells us that a year-over-year decline in the current-dollar level of RPP/RRSP assets is necessary to produce $TE_t < 0$.

Steady State Cases

We can learn more about the tax expenditure by examining *steady state* cases in which the pension system is mature (i.e., the contribution and benefit rates as a percentage of earnings are unchanging), there are no demographic shifts (i.e., the population at each age group is equal and grows at a constant rate over time), the rate of return on assets is constant, and earnings (and GDP) grow at a constant rate. In such cases, contributions, assets, benefits and the tax expenditure will all occupy constant fractions of GDP. Let Y_t be GDP, take $A_t = kY_t$ and take g as the growth rate of earnings and GDP so $Y_t = (1+g)Y_{t-1}$.

Then, using (**3**), we can express the tax expenditure as a fraction of GDP as

$$\frac{TE_t}{Y_t} = mk\left(\frac{g}{1+g}\right) \tag{4}$$

This demonstrates that in a steady state case, the tax expenditure will be positive as long as $g > 0$, meaning that GDP growth, produced by any of population growth, real wage growth or inflation, is positive. For example, with plausible values, $m = 0.20$, $k = 1.33$ and $g = 0.0302$ (1% real growth and 2% inflation), we would have a federal $TE_t = 0.78\%$ of GDP if we were in a steady state.[6]

[6] As detailed in Table 1 in Section 3, the federal average marginal tax rates on contributions, investment income and benefits (under the 2004 tax structure) are 21.4%, 20.6% and 17.6% respectively. The weighted average of these rates is very close to 20%. In a steady state system, the value of k depends on the contribution rate (C_t/Y_t), i, g, and the duration of the contribution and payout periods. For the model and parameter values of Case 1 in this section, $k = 1.33$.

Another interesting steady state result concerns the relationship between contributions and benefits. By rearranging (**2**) and using the previous assumptions, we can write the excess of benefits over contributions, as a fraction of GDP, as

$$\frac{(B_t - C_t)}{Y_t} = k\frac{(i-g)}{(1+g)} \tag{5}$$

This shows that benefits, funded out of both contributions and investment income, can exceed contributions on a permanent basis. The size of the excess depends on the asset level and the difference between the rate of return on assets and the GDP growth rate. With the same parameter values as above and i = 0.0557 (a 3.5% real interest rate and 2% inflation), for example, the excess of benefits over contributions equals 3.3% of GDP. With a contribution rate of 3.0% of GDP, benefits are permanently 110% higher than contributions (6.3% vs. 3.0% of GDP).

Even where there is a preponderance of benefits over contributions, the tax expenditure remains positive in a steady state case with nominal GDP growth. Expressions (**2**) and (**3**) show how this occurs. For $TE > 0$, the amount of investment income in the year must be greater than the excess of benefits over contributions. This point is relevant to non-steady-state cases as well. In most situations where benefits substantially exceed contributions, they will be accompanied by high levels of assets and investment income.

Maturing Pension System

Steady state results provide only a limited guide to future tax expenditure levels. As well as ignoring possible trends or fluctuations in economic variables such as investment yields and the rate of wage growth, they cannot take into account two key determinants of the tax expenditure level in Canada: the maturing of the RPP/RRSP system and the aging of the baby boom cohorts.

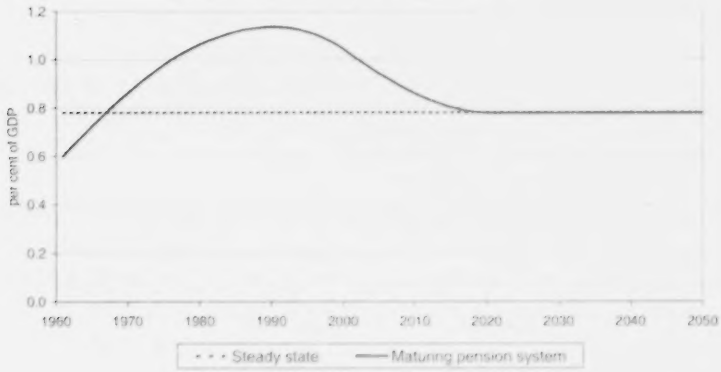
By the maturing of the pension system is meant an increase in age-specific contribution rates toward a reasonably stable level during the developmental phase of the system, and the consequential increases in asset and benefit levels.[7] The degree of maturity of the system will be examined more closely in Section 4. However, it may be noted that, while pension plans have existed throughout the 20th century, RRSPs were introduced in 1957 and became popular starting in the 1970s. In addition, improvements in pension standards in the 1980s (e.g., earlier vesting, portability options) increased the effectiveness of RPPs in delivering pension benefits.

[7] There are really two phases in the maturing of a pension system: one in which age-specific contribution rates are increasing and a second in which contribution rates are constant but asset and benefit levels are still affected by the lower contribution rates of earlier years. Only when the oldest beneficiaries have contributed at the steady state rate since the beginning of their working careers is the system fully mature.

To investigate the effects of a maturing pension system and the aging of the baby boomers, we constructed a simplified model of the retirement saving process. In this model, individuals save from age 25 to 64 and draw pension benefits from age 65 to 84. The pension of each individual is drawn in a level (un-indexed) life annuity that, by age 84, exhausts the assets accumulated at age 64. In the first cases, there are an equal number of people in each single-year age cohort.

Figure 1 presents time series of tax expenditure levels for two cases. In **Case 1: Steady State**, contribution rates are constant across (pre-retirement) age groups and constant over time. As above, the yield on plan funds is 5.57% and the rate of wage growth is 3.02%. With an aggregate contribution rate of 3% of GDP and a constant marginal tax rate of 20% on contributions, investment income and benefits, the resulting tax expenditure is constant at 0.78% of GDP.

Figure 1
Tax Expenditures
Case 1: Steady State
Case 2: Maturing Pension System

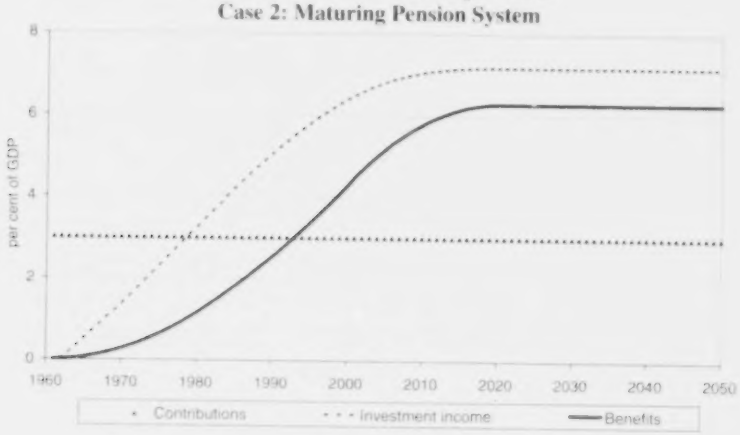


In **Case 2: Maturing Pension System**, we assumed that there were no contributions before 1961. The pension of someone reaching age 65 in 1971, for example, is based on only 10 years of contributions. Here, the tax expenditure first rises well above its steady state level before declining back to it. As we assume that contributions are made at year-end, there is no investment income and no pension benefits in 1961. For that year, $TE = mC_t$ (20% of 3% of GDP = 0.6% of GDP). The system attains full maturity and its steady state TE level of 0.78% of GDP only in 2020, the first year in which the 84-year-olds, who were age 25 in 1961, have contributed for their full careers.

Figure 2 helps to explain the simulation result by displaying how the three components of the tax expenditure, C_t, iA_{t-1} and B_t, evolve over time. As the history of contributions progresses from its 1961 start, asset and investment income levels grow and so, with a lag, do benefit levels. The lag in the growth of benefits behind that of assets and investment income is what creates the temporary increase in the tax expenditure above its steady state level.

With regard to the prospect of fiscal gains in the years to come, we see that a maturing pension system can create a fairly long period of declining tax expenditures—from 1990 to 2020 in this stylized model—but only from a level that is temporarily above its steady state value.

Figure 2
Tax Expenditure Components
Case 2: Maturing Pension System



Note: While benefits are subtracted in determining *TE*, they are shown as positive here. This allows us to see how the difference, $iA - B$, contributes to *TE*.

Aging of the Baby Boom Cohorts

As seen in Figure 3, the numbers of births in Canada during the 20 years from 1946 to the mid-1960s were 25% to 45% higher than a trend-line connecting the numbers in adjacent periods.

Figure 3
Number of Births in Canada

To investigate the effects of such a population bulge on pension flows and the tax expenditure, we modified the "Maturing Pension System" model, simply increasing by 35% the level of contributions for the cohorts born between 1946 and 1965. These baby boomers entered the model by reaching age 25 between 1971 and 1990; they reach age 65 between 2011 and 2030, and by 2050 they have disappeared from the model. Since the pension benefits of each single-year age cohort are calculated so as to exactly exhaust the savings it has accumulated at age 64, the higher contributions of the baby boomers translate into higher asset and benefit levels as the baby boomers reach retirement age. The results are shown in Figures 4 and 5.

Figure 4
Tax Expenditures
Case 2: Maturing Pension System
Case 3: With Aging Baby Boom Cohorts

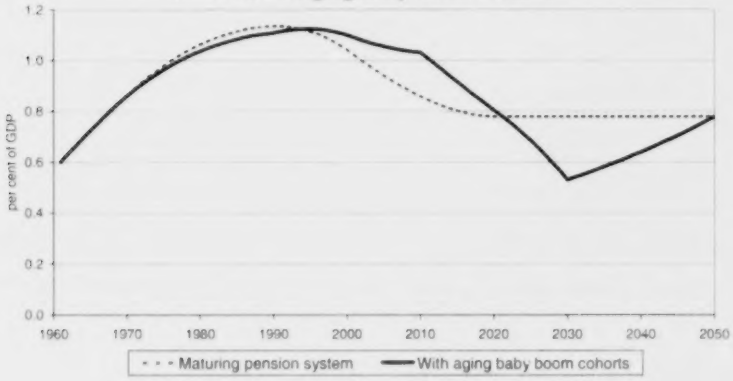
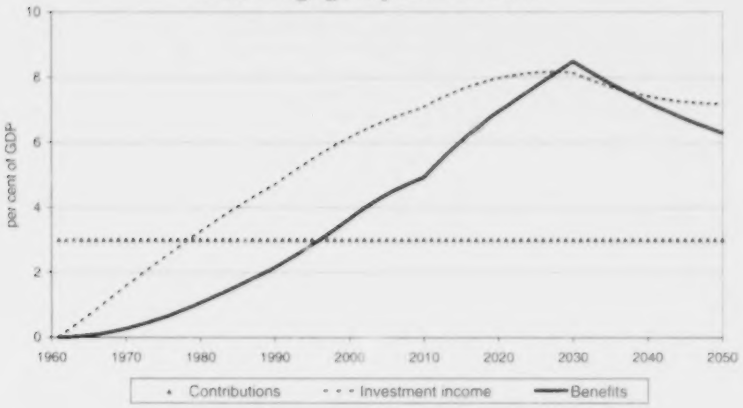


Figure 5
Tax Expenditure Components
Case 3: Aging Baby Boom Cohorts



The tax expenditure for the baby boom case rises above that of the mature-system case to a peak in 2010 and then declines sharply to reach a minimum value at 2030, the only year in which baby boomers make up 100% of the retired population. After 2030 *TE* rises again, reaching its steady state level in 2050.

Comparing Figures 2 and 5, we see that asset and benefit levels are slightly lower as percentages of GDP up to 2010 than with no population bulge. After that point they rise to higher levels. This is because the first effect of the high-population cohorts is to raise the aggregate levels of earnings, GDP and contributions. Asset and benefit levels increase only with a lag. It is also worth noting that the kinks in the *TE* and benefits lines in Figures 4 and 5 result from the simplifying assumption that benefits commence abruptly at age 65 for everyone in the population. This assumption is relaxed in the projections of Section 4.

In summary, these simple models of the tax expenditure and the retirement saving process tell us that both a maturing pension system and the aging of the baby boom generation can create substantial declines in the tax expenditure level. However, so long as the economy continues to grow in nominal terms, they should not be sufficient to reduce the tax expenditure to zero or below.

3. Development of the Projections

In this section, we outline the data, assumptions and methods employed in our projections of the cash-flow tax expenditure on saving in RPPs and RRSPs for the period 2001 to 2041. The results are presented in Section 4.

The projected tax expenditures are for savings in RPPs and RRSPs together. Projecting tax expenditures separately for the two types of plans would provide misleading results since individuals frequently transfer RPP assets to RRSPs at retirement or when changing jobs before retirement.

The projections follow the simpler models of Section 2 in the key respect that the RPP/RRSP benefits received by each single-year age cohort are exactly determined by the cohort's contributions and the investment income earned on them. Second, while contribution rates (contributions as a percentage of earnings) vary with age, the age-specific contribution rates are assumed to remain constant throughout the projection period. This assumption is maintained as well for benefits received by those under age 65. It is the level of benefits received by those age 65 and over that are determined by the flows of contributions and investment income. The following specific components of the projection are elaborated in the balance of this section:

- values of economic parameters – the rate of inflation, the real growth rate of wages and the real rate of return on RPP/RRSP assets;
- a projection of the population by single years of age for each year to 2041;

- the form in which benefits are paid out over the life of each asset holder;
- base-year (2001) levels of earnings, contributions, assets, benefits and marginal tax rates on the income flows by single years of age; and
- projected levels of earnings, GDP, savings flows and marginal tax rates.

Economic Parameters

The projections depend on key economic parameters, each of which is subject to a considerable degree of possible variation over time. For the first projection, or "reference scenario," we employ the following parameter values:

Table 1
Key Economic Parameters

	Real	Nominal[8]
	(% per annum)	
Inflation rate	n/a	2.00
Wage growth	1.00	3.02
Return on investment	3.50	5.57

As a comparison, in his most recent long-run projection of Canada Pension Plan (CPP) costs, the Chief Actuary chose the following parameters for the long run: inflation, 3.00%, real growth in the average wage, 1.10%, and real rate of return on investment, 4.10%.[9] A higher real rate of return may be expected on CPP assets than on RPP/RRSP assets because of the greater diversification opportunities and lower administration costs available to a single, very large fund.

[8] The nominal wage growth rate = 1.01*1.02 – 1; the nominal rate of return on investment = 1.035*1.02 – 1.

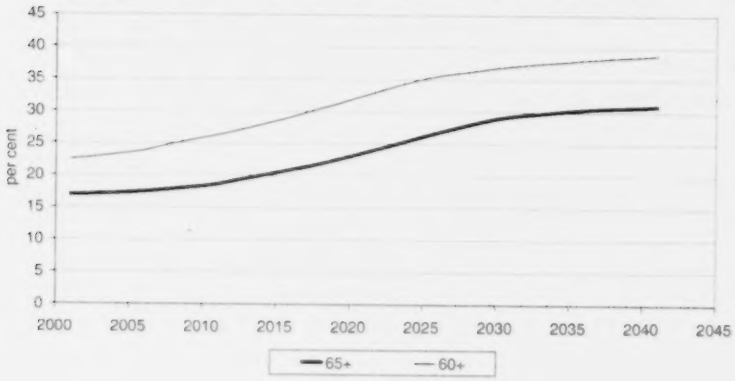
[9] Chief Actuary, Office of the Superintendent of Financial Institutions, *Actuarial Report (18th) on the Canada Pension Plan as at 31 December 2000*, December 10, 2001. These parameters apply for years beginning in 2015. For the years 2001–2014, the assumed rates are variable, averaging 2.4% for inflation, 0.7% for real wage growth and 4.4% for the real rate of return on investment.

Population Projection

The population projection, from 2001 to 2041 by single years of age, is Statistics Canada's "medium" growth scenario extended from 2026 to 2041 under the assumption that fertility, mortality and migration rates remain constant at their 2026 levels (fertility: 1.48 births per woman; life expectancies at birth: 80.0 years for males and 84.0 years for females; immigration: 250,000 persons per year).[10] It is the projection used by Jackson and Matier.[11]

Figure 6 illustrates the age structure shifts embodied in the projection. It shows the populations age 65+ ("seniors") and 60+ as percentages of the "adult" population age 20+. The proportion of seniors in the adult population begins to rise quickly after 2010. For obvious reasons, the corresponding increase in the proportion of adults age 60+ starts five years earlier. Over the period, seniors' share of the adult population increases by 83% and the share of the 60+ population by 72%. These populations increase even more strikingly—by about 120%—in relation to the "working age" populations (20–64 and 20–59). In the context of the tax expenditure projections, the growth of the age 60+ population is the more important trend since by age 60 benefit payments out of RPPs and RRSPs substantially exceed contributions to them.

Figure 6
Age Structure Shifts
Population Age 65+ and 60+ as a Per Cent of Population 20+



[10] Statistics Canada, *Population Projections for Canada, the Provinces and Territories*, March 2001, Catalogue No. 91-520.

[11] Harriet Jackson and Chris Matier, op. cit.

Form of Benefit Payouts

Modelling the payout of RPP/RRSP benefits involves several considerations:

- the age of commencement of benefits;
- their pattern over time (level, increasing or decreasing); and
- their duration, taking into account declining survival rates at higher ages.

Each of these factors can affect the tax expenditure level. In general, the later that benefits commence, the more back-loaded they are through inflation adjustments, other ad hoc increases and payments at death, and the longer their duration, the greater will be the degree of tax deferral and the level of *TE*. For example, in the steady state case of Section 2, shortening the benefit payout period by five years to age 79 would reduce the value of *TE* from 0.78% to 0.71% of GDP. For a given level of contributions, shortening the payout period reduces both investment income and benefits, but the reduction in investment income is greater than the reduction in benefits.

Based on an analysis of current payout patterns outlined in Appendix B, the benefit payouts in the projections are determined in the following manner:

- for each age under 65, the level of benefits is constant as a percentage of earnings throughout the projection period;
- benefits paid out at ages 65+ are determined so that, for each age cohort, they exactly exhaust the cohort's assets at age 64 plus post-age-64 contributions; and
- benefits from age 65 are paid out in the form of a 20-year term-certain annuity ending at age 84 and subject to indexing at a rate of the Consumer Price Index (CPI) less 1% (which implies 1% indexing in the reference scenario).

Base-Year Values for Earnings, Savings Flows and Marginal Tax Rates

We obtained aggregate levels of earnings and RPP/RRSP contributions and benefits by single years of age from the T1 microdata file for taxation year 2000 and then adjusted them in certain ways to produce estimates for base year 2001.[12] For each of the variables, we allocated the amounts reported by tax filers under age 20 to those age 20–24 and the amounts reported by those age 85+ to those age 65–84. The allocations were made in proportion to the existing amounts in the 20–24 and 65–84 age groups. These minor adjustments ensured that the total reported levels of earnings, contributions and benefits were captured in the projection model.

[12] All the statistics presented in this paper on the distribution of benefits and contributions across tax filers are taken from T1 files created by the Canada Customs and Revenue Agency. These annual files are stratified samples of tax filers. The latest available file is for the 2000 taxation year.

Earnings include several items identified on the T1 file: employment income, commissions from employment, other employment income, net business income, net professional income, net commission income, net farming income and net fishing income. For 2000, 16.1 million tax filers reported total earnings of $504.7 billion. To obtain earnings aggregates by age for 2001, we adjusted the 2000 levels by the factor 1.045. This is the 2001-to-2000 ratio of the National Accounts totals of wages and salaries plus unincorporated business income.

RPP/RRSP contributions include employer and employee RPP contributions and RRSP contributions. (No data is available on employer contributions to deferred profit-sharing plans.) Employee RPP contributions totalling $6,722 million were reported on the T1 file. To account for employer contributions not reported on the T1 file, we inflated the contributions at each age by the ratio $19,362/$6,722 to bring them to the Statistics Canada estimate of total RPP contributions for 2000.[13] RRSP contributions totalling $28,212 million on the T1 file were added to the RPP contributions. Next, we divided the 2000 contributions by the corresponding earnings levels to calculate contribution rates by age. These vary from 1.3% at age 20 to over 11% for the 50–64 age group and to over 15% for those with earnings at age 66. Applying the contribution rates to the 2001 earnings levels produced estimates of contributions by age for that year.

RPP/RRSP benefits on the T1 file include RPP income, RRSP annuity income, other RRSP withdrawals and withdrawals from registered retirement income funds (RRIFs). They totalled $48,926 million in 2000. As noted in the previous section, we treated benefit payments up to age 64 in a parallel manner to contributions, calculating benefit rates by dividing benefits by earnings for 2000 and applying these rates to projected earnings levels to produce benefit levels by age for 2001. For benefits received by seniors in 2001, we had two possible information bases. We could use an annuity formula to impute benefit levels from RPP/RRSP asset holdings by age from the 1999 Survey of Financial Security (SFS) or we could take pension income levels directly from the 2000 T1 file.[14] We chose the T1 data, as it is one year more recent and based on a large sample of tax returns rather than a smaller sample of household interviews. To obtain 2001 benefit levels, we updated the 2000 levels by the factor 1.084, the average rate of increase in aggregate RPP/RRSP benefits over the period 1997–2000.

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[13] Statistics Canada, *Canada's Retirement Income Program: A Statistical Overview (1990–2000)*, Catalogue No. 74-507.

[14] Statistics Canada, *The Assets and Debts of Canadians: An Overview of the Results of the Survey of Financial Security*, Catalogue No. 13-595, and *The Assets and Debts of Canadians: Focus on Private Pension Savings*, Catalogue No. 13-596.

RPP/RRSP assets do not show up in taxation data but are reported in aggregate by Statistics Canada on an annual basis. In addition, the SFS provided estimates of the distribution of these assets across households in 1999. There are some inconsistencies between different Statistics Canada estimates. For example, the 1999 estimate of RPP assets in the SFS was $604 billion while the current estimate for that year is $781 billion.[15] In contrast, the annual estimates of RRSP assets do not include assets held in self-administered plans or RRIFs, so the 1999 estimate of $268 billion is considerably lower than the estimate of $408 billion in the SFS.

Another difficulty in arriving at reasonable base-year asset levels is the behaviour of stock markets since 2000, the last year for which we have estimates. Using Statistics Canada's annual data together with an adjustment of RRSP assets by the factor 408/268 to include self-administered plans and RRIFs, we have aggregate estimates of $1,189 billion for 1999 and $1,250 billion for 2000. However, with the market downturn these estimates are likely to be too high as a basis for projecting future retirement benefits.

Since the tax expenditure formula for year *t* includes assets at the end of year *t*–1, 2000 is the base year for assets in our projection. In response to the data difficulties noted above, we have taken the following approach to estimating these assets. For ages 64+, we have calculated asset levels directly from the 2001 benefit levels given the assumption that the benefits are paid out in the form of a term-certain annuity to age 84 with indexing at a rate of CPI growth less 1%.[16] For ages up to 63, the assets are based on those reported in the SFS for 1999. Statistics Canada provided us with a distribution of RPP/RRSP assets by single years of age for ages 25–74. We smoothed this profile by taking a three-age moving average of the single-year estimates and we extrapolated it by allocating the assets held by those under 25 to the 20–24-year-olds. Then we inflated the levels by a factor of 1.1 to obtain estimates for 2000. The resulting asset total of $1,065 billion for 2000 is purposefully lower than the Statistics Canada estimate to allow in an ad hoc manner for the asset declines that have occurred in 2001 and 2002.

The resulting age profiles of contributions, investment income (equal to assets times the assumed interest rate of 5.57%) and benefits are presented in Figure 7. Two points are of particular interest. First, even though the median retirement age is currently about 62, RPP/RRSP benefits begin to exceed contributions as early as age 56. This suggests that the effects of the aging of the baby boom cohorts on the *TE* level should be expected to

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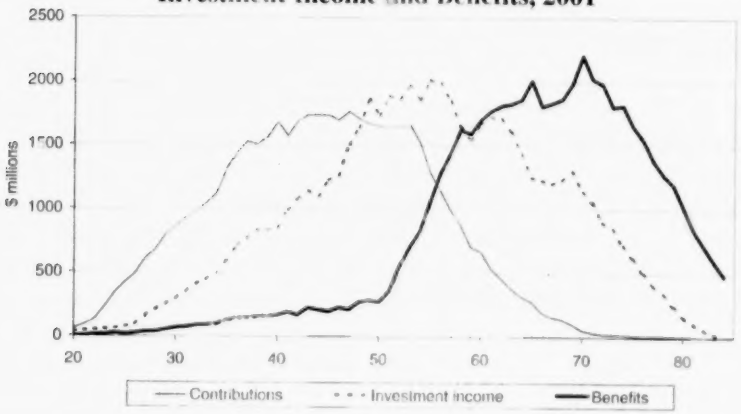
[15] Statistics Canada, *Canada's Retirement Income Program: A Statistical Overview*, Catalogue No. 74-507. Statistics Canada has recently revised its RPP asset estimates to move from a book value to market value basis for trusteed funds.

[16] With B_x representing benefits received at age x and a = (1+ ΔCPI – .01)/(1+i), the formula for the asset held at age x is $A_x = B_x \frac{(1-a^{84-x})}{(1+i)(1-a)}$.

start showing up very soon rather than only in 2011, when the first baby boomers reach age 65. Second, and more important, we see that older cohorts dominated by beneficiaries rather than contributors still account for a substantial proportion of total assets and investment income. For example, those age 56 and over hold 48% of the assets. This implies that the foregone tax on investment income should remain high as the baby boom moves into retirement, thus limiting the reduction in the tax expenditure caused by the demographic shift.

Figure 7
Age Profile of Total Contributions, Investment Income and Benefits, 2001



The **marginal tax rates** (MTRs) on contributions, investment income and benefits are the final component of the *TE* estimate for the base year. We have estimated these for single-year age cohorts, using microdata on contributions and benefits. Since we are projecting federal tax expenditures we consider only federal tax rates. Since tax reductions have been legislated that are not yet in effect, we use the 2004 tax structure as the basis for all the rates.

In describing further how the rates are calculated, it is necessary to be quite precise about their nature.

First, they are "average" marginal tax rates in two separate ways. The rate on contributions for an age cohort, for example, is an average of that for all contributors in the cohort. In addition, the rate for each contributor is an average of that for each dollar contributed. For example, in 2004 the federal MTR rises from 22% to 26% at an income threshold of $70,000. For a contributor with income of $75,000 and an RRSP contribution of $10,000, the MTR on the first dollar of contribution is 26% but the average MTR on the total contribution is 24% ($5,000 at 26% and $5,000 at 22%).

Second, the MTR on investment income is determined in conjunction with the MTRs on contributions and benefits, and the effects differ in the two cases. For contributors, elimination of the tax preference means loss of the deduction on the contribution *plus* an income inclusion of some amount of formerly sheltered investment income.

In the case of the contributor earning $75,000, for example, this means an increase in taxable income from $65,000 to $75,000 due to the elimination of the RRSP contribution deduction plus a further increase to, say, $80,000 on account of the investment income. Computed in this manner, the average MTR on the investment income is likely to be as high or higher than that on contributions. (In the example, it is 26% as compared to 24% for the contribution.) For beneficiaries, on the other hand, the inclusion of investment income offsets, fully or partly, the tax reduction from excluding RPP/RRSP benefits from taxable income. Consider an individual with reported income of $35,000 of which $15,000 is RPP income, and with sheltered RPP/RRSP investment income of $10,000. Eliminating the tax on benefits reduces this individual's taxable income to $20,000, but taxing the sheltered investment income raises it back to $30,000. Based on the tax brackets of 2004, the average MTR on both changes is 16%. In general, the average MTR on investment income for beneficiaries will be very similar to that on the benefits.

We calculate for each age cohort average MTRs on investment income as a weighted average of MTRs for contributors and beneficiaries. The weights are the total levels of contributions and benefits for the age cohort. For contributors, the MTR is based on an estimate of the average RPP/RRSP investment income of contributors in the cohort. For beneficiaries, we assume the same MTR for investment income as for benefits.

Overall MTRs for contributions, investment income and benefits are calculated as weighted averages of the MTRs for each age cohort. For base year 2001, Table 2 presents the results.

Table 2
Marginal Tax Rates on Savings Flows for 2001

		(%)
Contributions		21.4
Investment income[1]		
Contributors	23.7	
Beneficiaries	17.6	
Total		20.6
Benefits		17.6

[1]MTRs for 2000.

Tax expenditure for 2001. Based on the *TE* formula from Section 2, the projected 2001 tax expenditure is:

$$TE = (0.214)(\$49{,}714 \text{ million}) + (0.206)(\$59{,}334 \text{ million}) - (0.176)(\$52{,}207 \text{ million})$$

$$= \$13{,}677 \text{ million.}$$ [17]

This tax expenditure amounts to 1.25% of Canada's GDP for 2001 (estimated at $1,092 billion).

Projections to 2041

Projected *TE* values are based on projections of earnings, contributions, benefits, assets and MTRs over the period.

To project aggregate **earnings** by age, we first obtained per capita earnings levels for 2001 by dividing the 2001 aggregates by the population in each age cohort. Next, we projected the per capita earnings levels to future years by the assumed rate of wage growth (3.02% in the reference scenario). Finally, we obtained aggregate earnings by inflating the projected per capita wage levels by the projected population at each age. As we assume that total earnings represent a constant fraction of GDP throughout the period, projected total earnings define projected GDP levels.

The projection of **contributions** is based on the assumption that age-specific contribution rates remain unchanged at their 2000 values. Thus, aggregate contribution levels by age are obtained simply by applying the contribution rates to the projected levels of earnings at each age.

As noted above, the methods used in projecting **benefits** are different for those under age 65 than for seniors. For those age 20–64, benefits are assumed constant as a percentage of earnings for each age cohort. As in the case of contributions, aggregate benefits by age are obtained by applying the benefit rates to the projected earnings levels. For seniors, we calculated the aggregate amounts of benefits received at each age and for each year from the expression that relates the initial benefit amount of an indexed term-certain annuity to the asset available to fund it.[18] It should be noted that this procedure results in benefits for a particular age cohort that increase over time at a slightly higher rate than CPI growth less 1%. The reason is that the assets held by seniors are modified each year not only by the payout of benefits but by the modest levels of contributions they continue to make.

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[17] Due to differing assumptions concerning asset levels and MTRs (e.g., we assume that tax reductions phased in to 2004 are fully implemented), this estimate is lower than the corresponding estimate of $16,165 million in the annual *TE* estimates presented in Part 1 of this *Tax Expenditures and Evaluations* report.

[18] For assets A_{x-1} held at the end of the previous year and with the other variables defined as in footnote 16, the formula is $B_x = A_{x-1}\dfrac{(1+i)(1-a)}{\left(1-a^{85-x}\right)}$.

The level of **assets** held at a given age, x, at the end of any year, t, in the projection is obtained directly from the simple accounting expression

$$A_{x,t} = (1+i)A_{x-1,t-1} + C_{x,t} - B_{x,t} \tag{6}$$

The **average MTRs** by age for contributions, investment income and benefits are assumed constant over the projection period. With changes in the age distribution of these savings flows, the overall MTRs can vary from year to year. However, in practice the variation is slight. The MTR on contributions drops from 21.4% to 21.3% and then regains its initial value; that on benefits declines from 17.6% to 17.4% and then rises to 17.7%; and that on investment income declines from 20.6% to 20.2% over the period.

4. Results

In this section, we present the tax expenditure projection for the reference scenario, based on the assumptions and methods outlined above. We also explore how the projection is sensitive to the economic parameters by making alternative assumptions regarding their values over time.

Reference Scenario

In the previous section, the *TE* for RPP/RRSP saving was estimated at 1.25% of GDP for 2001. Our reference scenario projection provided in Figure 8 suggests that the *TE* will decline as Canada's population ages, but only modestly, reaching 1.11% of GDP by 2041.

In 2001 dollars, a *TE* decline of 0.14% of GDP amounts to about $1.5 billion, far smaller than the declines of over $30 billion in the projections cited earlier in this paper.

Figure 8
Tax Expenditure Projection,
Reference Scenario, 2001–2041

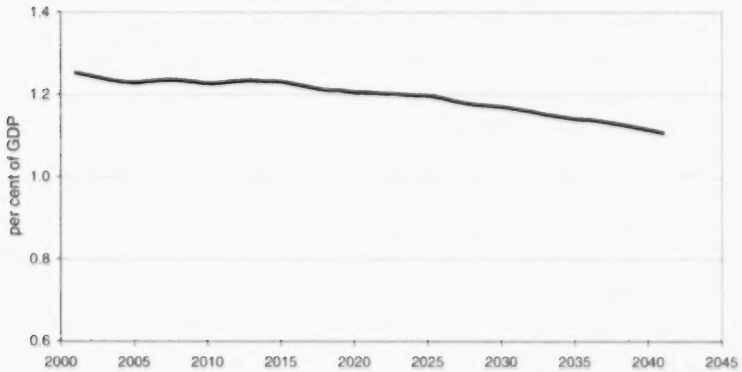
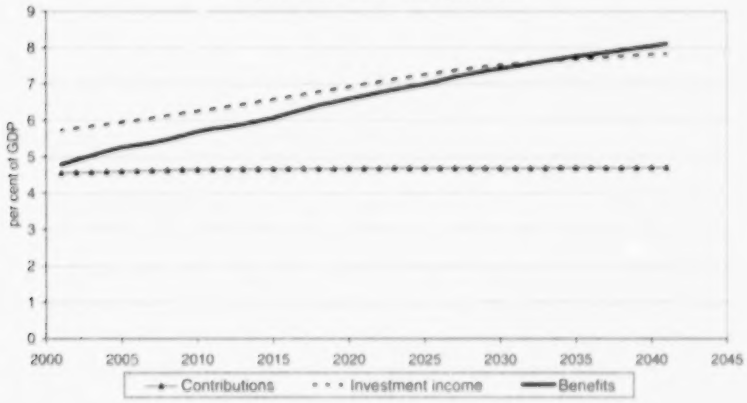


Figure 9 shows that, with contributions maintaining a roughly constant share of GDP, it is the fact that benefits rise more rapidly than investment income that produces the *TE* decline. On the other hand, as we saw in the more stylized aging baby boom model of Section 2, the drop in the *TE* is limited by the continuing growth of asset levels that accompanies the aging of the baby boom cohorts.

Figure 9
Tax Expenditure Components
in the Reference Scenario



Why does this projection not exhibit the same rapid decline in *TE* as seen in the aging baby boom model in Figure 4? One possible answer is that the Canadian pension system is less mature than the model of Section 2 in which age-specific contribution rates were assumed constant from 1961 on. Figures 10 and 11 provide some evidence of this.

Figure 10
RPP/RRSP
Contribution and Benefit Rates

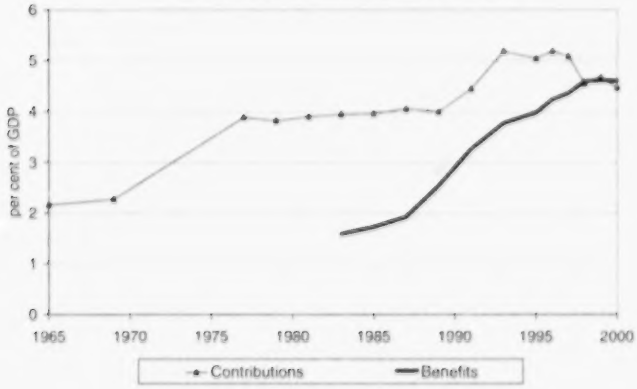
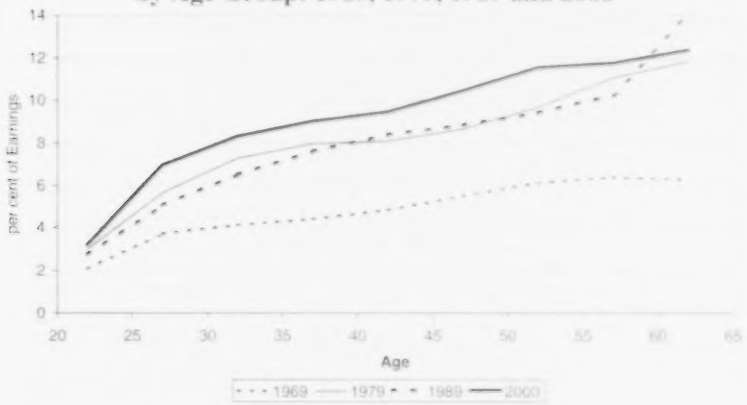


Figure 10 shows how the RPP/RRSP contribution rate (total contributions as a percentage of GDP) has evolved since 1965. It also shows the increase in benefits over the latter part of the period.[19] The contribution rate rose substantially in the 1970s and again in the 1990s. The modest decline in recent years has not been fully studied, but its sources could include: (1) a decline in public sector employment in the early and mid-1990s; (2) rapid employment growth after 1993 concentrated in sectors (small business, high technology) and demographic groups (youth) with relatively low pension coverage and savings rates; (3) a shift in saving from RRSPs to registered education savings plans with the introduction of the Canada Education Savings Grant in 1998; and (4) the reduction and/or freezing of the dollar limits on RPP benefits and RPP/RRSP contributions in 1996 and subsequent years.

This contribution rate history will overstate the change in contribution behaviour to the extent that it is affected by the movement of the baby boom cohorts into high-saving age groups. To correct for this factor, Figure 11 shows the age profile of contribution rates, expressed here as percentages of reported earnings, for the years 1969, 1979, 1989 and 2000. These years were chosen both to span the period and because they were all years of relatively good economic conditions.[20] From the figure, it is evident that the contribution increases in the 1970s and the 1990s were not merely the result of the movement of the baby boom cohorts into high-saving age groups.

Figure 11
RPP/RRSP Contribution Rates
by Age Group: 1969, 1979, 1989 and 2000



[19] The data on RPP contributions come from Statistics Canada, *Pension Plans in Canada*, Catalogue No. 74-401, various years. RRSP contribution levels and RPP/RRSP/RRIF benefit levels are taken from the Canada Customs and Revenue Agency (CCRA), *Taxation Statistics*, various years.

[20] The data are for five-year age groups and were taken from Table 4 of CCRA, *Taxation Statistics*. The RPP contribution levels used in calculating the RPP/RRSP contribution rates were obtained by applying the ratio of total RPP contributions (from Statistics Canada, *Pension Plans in Canada*) to total employee contributions (*Taxation Statistics*) to the age-group employee contributions.

An increase in the contribution rate up to the 1990s would delay the maturation of the pension system and raise *TE* levels in the projection period. However, it appears inadequate to fully explain the relatively slow decline in the *TE* between 2011 and 2031. Two other factors likely contributed. First, while in the stylized models of Section 2 the receipt of RPP/RRSP income is limited to the 65+ age group, the projection model recognizes that it is actually spread out over the life cycle with over 43% of benefits going to those under 65. Second, while the baby boom model of Section 2 assumes no demographic variation apart from the aging of those cohorts, there has been in fact a baby boom echo producing a small second peak in births around 1990 (as seen in Figure 3). Those echo cohorts will enter the labour force around 2010 and their high-saving years around 2030. Their effect is seen in a slight increase in the aggregate contribution rate, from 4.55% to 4.70% of GDP, over the projection period. Taken together, these three factors should account for the gradual pace of decline in the projected tax expenditure after 2010.

Sensitivity to Assumptions

Any long-run economic projection depends on the parameters assumed for factors such as real wage growth, inflation and the real return on investment. Our reference scenario employs plausible parameter values, which are quite similar (very similar real wage growth, somewhat lower inflation and a slightly lower real interest rate) to those used by the Chief Actuary in projecting CPP costs. However, other economic scenarios are quite possible so it is of interest to see how changes in key parameters would affect the *TE* projection. The parameter changes considered here include changes in the rate of real wage growth, the rate of inflation, and the real rate of return on investment. Also, in Appendix C, we examine the effect of departing from the definition used in the annual tax expenditure estimates by modifying the estimated marginal tax rates to take into account reductions in Guaranteed Income Supplement benefits due to the receipt of RPP/RRSP benefits or investment income on RPP/RRSP assets.

Figure 12 provides *TE* projections where, after a phase-in period, the **rate of growth of real wages** is assumed to be 2% or 0% per annum rather than the reference scenario value of 1% per annum. Over the phase-in period, the growth rate increases or decreases by 0.1 percentage point per year, reaching its final value by 2011.

The effects on the *TE* values are quite modest, with maximum changes of about 0.07% of GDP during the period. Another finding of interest is that the short- and medium-term effects of a real wage change are opposite to the long-term effects. Equation (**4**) of Section 2 showed that, in a steady state case, *TE* is positively related to the growth rate of earnings and GDP. Here, though, there is a 33-year transition before that result becomes evident. The reason is that, in the faster wage growth (2%) case, for example, the constant initial value of assets produces levels of investment income and benefits that are lower (as a percentage of GDP) than in the reference scenario, and the initial impact is significantly greater for investment income than for benefits. At 2021 the level of investment income is lower by 1.02% of GDP while the level of benefits is lower by 0.73%. For the lower wage growth case, the converse is true.

Figure 12
Tax Expenditure
With Different Rates of Real Wage Growth

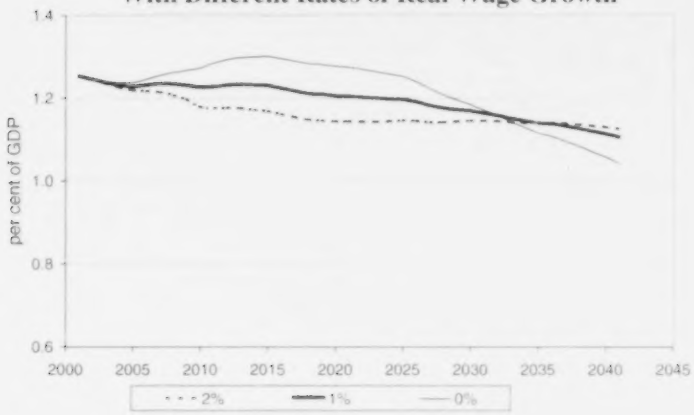
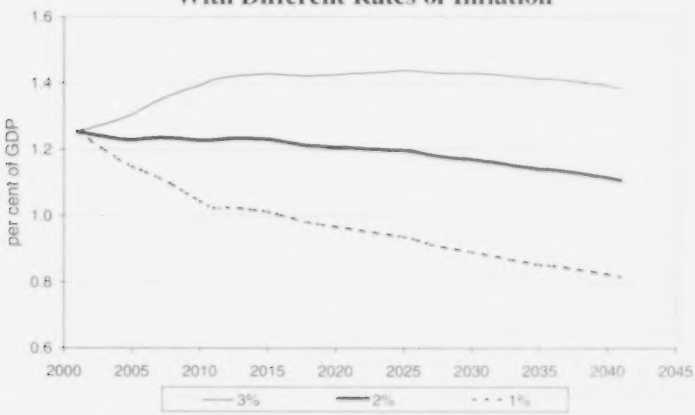


Figure 13 shows the effect of alternative assumptions about the **inflation rate**—3% (as assumed by the Chief Actuary) and 1% per annum as compared to the reference scenario assumption of 2%. Again, the alternative rates are phased in over the period to 2011.

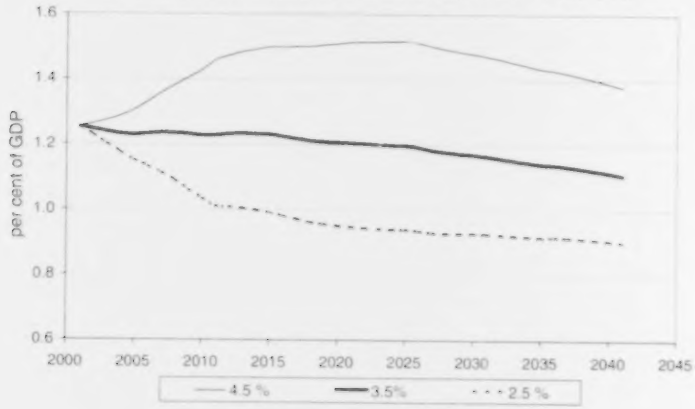
Figure 13
Tax Expenditure
With Different Rates of Inflation



Here the effects on the *TE* levels are simpler and stronger than for changes in real wage growth. The main reason for this is that higher inflation, for example, is reflected in a correspondingly higher nominal rate of return. This produces an immediate and proportional increase in the level of investment income, a positive component of *TE*. This direct effect on *TE* is essentially the only effect since additional inflation otherwise has the same proportional effect on the levels of earnings, GDP, contributions, assets and benefits.

The effect of an increase in the **real rate of return on investment** is shown in Figure 14, in which scenarios with real rates of return of 4.5% and 2.5% per annum, phased in by 2011, are compared with the reference scenario (3.5%). The results are similar to that of the inflation case in that a change in the real rate of return on investment directly affects the *TE* level through its investment income component. However, because the real return increase produces a more direct and immediate increase in asset levels than in benefit levels, it results in a further increase in the *TE* level that is reversed after a period of time as the asset increases are translated into faster benefit growth.

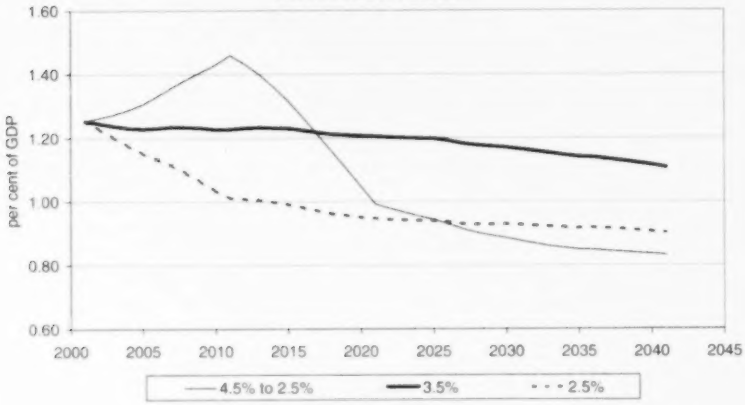
Figure 14
Tax Expenditure
With Different Real Rates of Return on Assets



A related scenario of interest involves a **drop in the real rate of return** during the projection period. General equilibrium, overlapping generations models predict such a result in response to a rise in the capital-labour ratio as the population ages and growth in the labour force slows.[21] Simulating such a change as a rise in the real rate to 4.5% by 2011 and then a faster drop in the rate from 4.5% to 2.5% per annum by 2021 yields a time path of *TE* that is roughly approximated by a drop from the 4.5% track to the 2.5% one in Figure 15. By 2041, the *TE* value in the declining yield case is 0.83% of GDP, somewhat lower than the value of 0.90% in the 2.5% yield case.

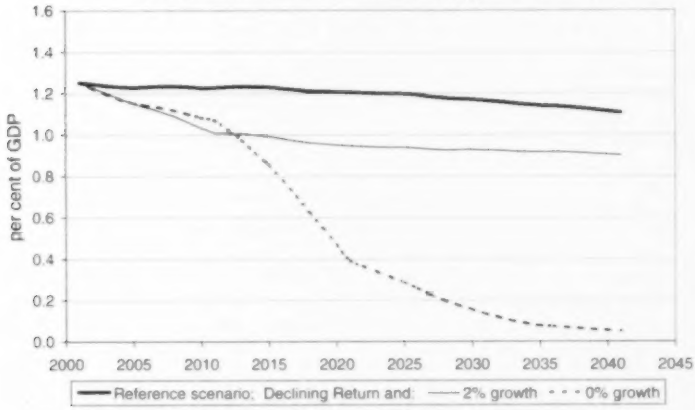
[21] See, for example, Ketil Hviding and Marcel Mérette, *Macroeconomic Effects of Pension Reform in the Context of Aging: OLG Simulations for Seven OECD Countries*, OECD Working Paper No. 201, June 1998 and William Scarth, "Population Aging, Productivity and Living Standards," Institute for Research on Public Policy and the Centre for the Study of Living Standards, *The Review of Economic Performance and Social Progress: Towards a Social Understanding of Productivity*, Vol. 2, December 2002.

Figure 15
Tax Expenditure with a Decline in the Real Rate of Return on Assets



Finally, it is of interest to explore economic conditions that could result in a drop to quite low levels of *TE* as the population ages. Figure 16 combines the declining real rate of return scenario (4.5% in 2011 to 2.5% in 2021) with declines in inflation and real wage growth. In the first case, inflation declines from 2% to 1% by 2011, yielding nominal wage and GDP-per-worker growth of about 2%. In the second, both the inflation rate and the real wage growth rate decline to zero by 2011, producing zero growth in nominal wage levels and GDP per worker. Between 2011 and 2041, the federal *TE* drops from 1.25% of GDP to 0.51% in the 2% growth case and to 0.05% in the zero-growth case.

Figure 16
Tax Expenditure With a Declining Return on Assets and Low Nominal Wage Growth



Even with considerable variation in economic parameters from those in the reference scenario, these projections do not exhibit declines in the tax expenditure to substantial negative values such as those projected in the studies cited in footnotes 2 and 3. What differences in methodology or assumptions could explain the differing results? A full accounting of the differences cannot be made here, but some points are worth mentioning. First, the projections in this section reflect the fact that individuals under age 65 receive about 43% of total RPP/RRSP benefits. This reduces the estimated effect of population aging on the aggregate level of benefits and thus on the *TE* value as compared to models in which seniors receive all benefits. Second, the projections here assume conservative long-run real rates of return on investment (3.5% in the reference scenario and up to 4.5% in alternative cases) while the cited studies appear to assume rates of 7% or higher at least in the early years of the projection period. High real rates of return tend to raise future benefits in relation to contributions and so produce a decline in *TE* values. Third, the current projections generally assume positive inflation while the cited studies ignore inflation. In addition, one of the studies assumes zero real wage growth. Again, these differences result in lower growth in the benefit-to-GDP ratio here than in the other studies. Finally, as noted earlier, one of the other projections is based on a modified definition of the tax expenditure that is lower and more sensitive to population aging than the conventionally-defined *TE*.

5. Conclusion

In the reference scenario, we estimate a decline in the federal tax expenditure on RPP/RRSP saving of 0.14% of GDP or $1.5 billion in 2001 dollars. A sharp and sustained decline in the real interest rate would increase this *TE* drop, especially if it were accompanied by a significant decline in real wage growth and inflation. On the other hand, increases in the rates of real wage growth, inflation and the return on investment over the period would tend to offset the projected *TE* decline. This range of scenarios demonstrates the high degree of uncertainty that must be attached to long-run projections. At the same time, they suggest that it would not be prudent for governments to count on receiving very large fiscal gains as a result of a decline in the tax expenditure on RPP/RRSP saving.

Finally, we would note that changes in the tax expenditure for retirement saving are only one aspect of the effect of population aging on income tax revenues—and probably not the dominant one. In particular, even though governments recoup deferred taxes as seniors withdraw funds from RPPs and RRSPs, the more important fact is that seniors generally have lower incomes than working-age taxpayers and so pay lower taxes. As a result, an increasing population share of seniors should tend to depress income tax revenues.

APPENDICES

A. Rate of Return on RPP/RRSP Saving

The value to savers of the tax preference on RRSP (and RPP) saving is sometimes not well understood. Some suggest that because RRSP proceeds are eventually taxed, the double taxation of savings inherent in an income tax system is reduced but not eliminated. Others conclude that the attractiveness of RRSP saving depends on whether the tax refund from the contribution deduction is saved or spent. These conclusions are based on a misunderstanding of what saving is and a failure to take the value of the contribution deduction fully into account.

Saving is the deferral of consumption from one period of time to another. The rate of return on saving is the rate at which consumption can be exchanged between periods. In the case of an RRSP contribution of $1,000 by an individual facing a marginal tax rate of 40%, for example, the net cost of the contribution and the net reduction in current consumption is $600. This is the amount of saving and thus the amount on which the rate of return calculation should be based. (Analysts sometimes calculate a rate of return based on a $1,000 RRSP contribution together with investment of the $400 tax refund outside an RRSP. By analyzing a mix of RRSP and non-RRSP saving, this procedure cannot correctly measure the return to RRSP saving.)

With a one-year investment and a pre-tax rate of return of 10%, the $1,000 RRSP contribution yields pre-tax proceeds of $1,100. After taxation at 40%, the net proceeds are $660, providing an after-tax rate of return of $60 or 10% on the net savings of $600. As the after-tax and pre-tax rates of return are the same, we can conclude that the RRSP has the same effect as the complete elimination of tax on the investment income earned on monies saved outside an RRSP.[1] This result is demonstrated more formally below along with the effect of tax rates that vary between periods.

To obtain the after-tax rate of return on RRSP saving, we need to determine the rate at which current consumption can be exchanged for future consumption using an RRSP. Consider consumption levels in two periods, C_0 and C_N, that depend on income levels, Y_0 and Y_N, marginal tax rates, m_0 and m_N, tax parameters, K_0 and K_N, that account for tax credits and the taxation of part of income at tax rates less than m_0 or m_N, the level of the RRSP contribution, R_0, and the pre-tax nominal rate of return, i, earned on the funds in the RRSP.

[1] This is also the same result as would be obtained through saving in a tax pre-paid savings plan (TPSP). Contributions to a TPSP are not deductible, but investment income earned in the plan and benefits paid out of it are not subject to income tax.

$$C_0 = Y_0 - R_0 - m_0(Y_0 - R_0) + K_0$$

$$C_N = Y_N + R_0(1+i)^N - m_N\left(Y_N + R_0(1+i)^N\right) + K_N$$

The effects of an incremental change in the level of the RRSP contribution on C_0 and C_N are

$$\frac{dC_0}{dR_0} = -(1 - m_0)$$

$$\frac{dC_N}{dR_0} = (1 - m_N)(1+i)^N$$

Consequently, the rate at which consumption can be exchanged between the periods by RRSP saving is

$$\left(\frac{dC_N}{dC_0}\right) = \left(\frac{dC_N / dR_0}{dC_0 / dR_0}\right) = -\left(\frac{1 - m_N}{1 - m_0}\right)(1+i)^N$$

To convert this to an annual rate of return on RRSP saving, we ignore the negative sign, take the Nth root of the expression and subtract 1.

$$RR = \left(\frac{1 - m_N}{1 - m_0}\right)^{\frac{1}{N}}(1+i) - 1$$

Where there are no income-averaging effects and the RPP/RRSP tax treatment provides a pure tax deferral, we have $m_N = m_0$ and $RR = i$.

Where m_N is lower than m_0, as will often be the case in saving for retirement, RR will exceed i. The importance of possible income-averaging effects on RR depends on the holding period, N, as well as the tax rates. Consider the case of an individual who faces a top-bracket (federal/provincial) tax rate of 45% before retirement and a lower rate of 30% after retirement. With a pre-tax rate of return of 7%, the after-tax rate of return is 9.6% with a 10-year holding period and 8.3% with a 20-year period, indicating that the income-averaging effects become relatively less important as the holding period increases.

B. Form of Benefit Payouts

In the projections, benefits received at each age up to 64 are assumed constant as a percentage of earnings while benefits received by those age 65+ are assumed to be paid out in the form of a term-certain annuity to age 84 with indexing at a rate of CPI growth less 1%. For each age cohort, the present value of post-age-64 benefits is equal to the sum of assets at age 64 and the present value of post-age-64 contributions. This appendix reviews the information about current benefit patterns on which these assumptions are based.

RPP/RRSP benefit payments are received not only by seniors and retirees. Taxation statistics for 2000 indicate that of $48.9 billion in total benefit payments, 12.2% went to individuals under age 55, 31.2% to those age 55–64 and 56.6% to those age 65+. Total payments to the 55–64 age group are composed of annuity income, mostly from RPPs but also from matured RRSPs, and discretionary withdrawals from RRSPs and RRIFs. Among both the 55–64 and 65+ age groups, annuity income accounts for 80% of the total. Pensioners age 55–64 have higher pensions on average than 65–69-year-olds. This reflects the payment of bridge benefits, which cease at age 65, as well as other factors.

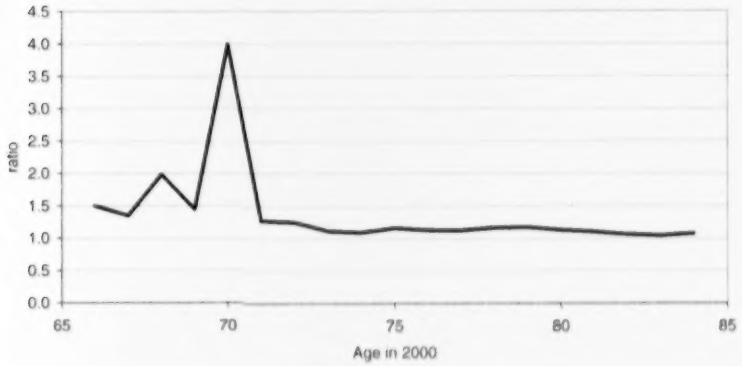
RPP pensions usually begin at retirement but are not required to commence until age 69. RRSPs must be used to purchase annuities or converted to RRIFs by age 69, and RRIF payments must begin by age 70. In 2000, the percentage of tax filers reporting RPP/RRSP income rose from just over 50% at age 65 to over 68% at age 71, indicating that a considerable number of seniors are able to defer receipt of registered plan income for several years after age 65.

The time pattern of benefit payments may be expected to differ for annuity and non-annuity benefits. Annuities generally provide level or indexed payments. About one-half of RPP members belong to plans in which retirement benefits are fully or partially indexed to increases in the CPI. Those in most other defined benefit RPPs have benefits that are subject to ad hoc inflation adjustments. Annuity payments typically cease with the death of the annuitant or a surviving spouse but may also include payments of a guaranteed amount after death when it occurs within a limited period after pension commencement.

For withdrawals from RRSPs and RRIFs, the pattern of payments is likely to be less regular. RRIFs are subject to minimum withdrawal requirements and, where they include funds transferred from RPPs, withdrawal maximums as well. Within these constraints, withdrawals can vary from year to year at the annuitant's discretion. Upon the death of the annuitant, the balance of funds must be withdrawn and included in the annuitant's income unless it is transferred to the RRIF or RRSP of a spouse, minor child or dependent infirm child.

Direct evidence on the time pattern of benefits is presented in Figure B.1. It compares the level of RPP/RRSP benefits in 1999 and 2000 for tax filers reporting such benefits in both years.[2] For each such filer, the ratio of benefits in 2000 to benefits in 1999 is calculated and the average of these ratios is shown, by age, in the figure.

Figure B.1
Average Ratio of Benefits,
2000/1999, by Age of Recipient



On average, benefit levels tend to show large increases over the age range 65–70 and modest increases after that. The early increases, and the year-to-year jump at age 70 in particular, appear to result from additions to existing pension income coming from RRSP withdrawals and the required conversion of RRSPs to RRIFs. To provide a closer look at the time pattern of benefits, unaffected by RRSP-RRIF conversions, Table B.1 presents the size distribution of the average ratios, R, for the age group 72–80.

While there is considerable dispersion of ratios, we see that 40% of pensioners had level benefits (R = 1 exactly) or benefits that increased by up to 2%. The CPI increase in 1999, which typically would be the basis for inflation adjustments in 2000, was 1.7%. A further 12.5% had benefit increases between 2% and 5%, perhaps reflecting ad hoc adjustments of less than annual frequency. In view of this evidence, the projections assume that pension payments are indexed at a rate of CPI growth less 1%. For the reference scenario, with 2% inflation, this means an annual increase of 1%.

[2] For pension income and other income components, the T1 file contains data on both the current and previous tax years.

Table B.1
Distribution of Ratios (R)
Pension Income 2000/Pension Income 1999

Range of R	Average R	Frequency
		(%)
< 0.75	0.460	6.3
0.75–1.00	0.949	22.5
1.00	1.000	15.2
1.00–1.02	1.012	24.7
1.02–1.05	1.030	12.5
1.05–1.25	1.115	10.2
> 1.25	3.009	8.6
Total	1.145	100.0

Regarding the duration of benefits, we noted above that about 80% of RPP/RRSP benefits received by seniors are paid in the form of annuities. (Given the growing importance of RRSPs compared to RPPs, this percentage may be expected to decline over time.) Among those who recently reached retirement age (the 65–69 age group), single males received 11% of RPP/RRSP benefits, single females 17% and couples 72%. Thus, the dominant form of payout at the present time is a life annuity with a survivor benefit continuing after the death of the annuitant.[3]

However, since annuities are subject to varying sets of survival probabilities (male, female, joint and survivor) and since a significant and growing portion of registered plan assets are paid out as RRSP or RRIF withdrawals, it seems appropriate to model the payout of benefits more simply as a term-certain annuity.

To choose the duration of a term-certain annuity, we looked for one that would embody a comparable degree of tax deferral, and *TE* cost, as the stream of expected payments under a representative life annuity with 1% indexing. By a representative annuity, we mean one for which the survival probabilities reflect an 11/17/72 mix of the survival probabilities for single males, single females and couples (given a pension with a 60% survivor benefit).

[3] Federal and provincial pension benefits legislation generally requires that, except in the case of joint election by spouses, RPP members with spouses take their benefits in a form that includes a survivor benefit of 60% or more of the base pension.

To compare *TE* costs of different patterns of benefit payout, a convenient measure is:

$$TE \text{ fraction} = 1 - \frac{PV_{TA}}{PV_{NTA}}$$

where PV_{TA} is the present value of the stream of payments discounted at a pre-tax (i.e., tax-assisted) rate of return and PV_{NTA} is the present value of the same payments discounted at an after-tax (non-tax-assisted) rate of return. Example: consider the case of a single payment in 10 years and assume $i = 5.57\%$ and tax rate $m = 0.25$ (in all years) so that the after-tax rate of return, $(1-m)i = 4.1775\%$. Then the *TE* fraction $= 1 - (1.0557^{-10}/1.041775^{-10}) = 1 - (0.582/0.664) = 0.123$. Table B.2 presents the *TE* fractions for several benefit payout forms. In each case the first payments begin at age 65. Except for the term-certain annuity cases, the payments are "expected" payments to age 110—i.e, the potential payment at each age multiplied by the survival probability for that age. In the RRIF cases, there is an expected payment assuming survival to each age plus an expected final payment of the fund balance assuming death at that age.

Table B.2
***TE* Fractions for Different Benefit Payout Forms**

	Fraction
RRIF, minimum withdrawals	0.132
23-year term-certain annuity, 1% indexing	0.129
Life annuity, 1% indexing	**0.128**
Life annuity, no indexing	0.121
RRIF, withdrawal rates: 7.5% age 65–70, minimum after	0.118
20-year term-certain annuity, 1% indexing	0.116

This analysis suggests that the *TE* for a representative life annuity with 1% indexing is equal to that of a term-certain annuity of close to 23 years.

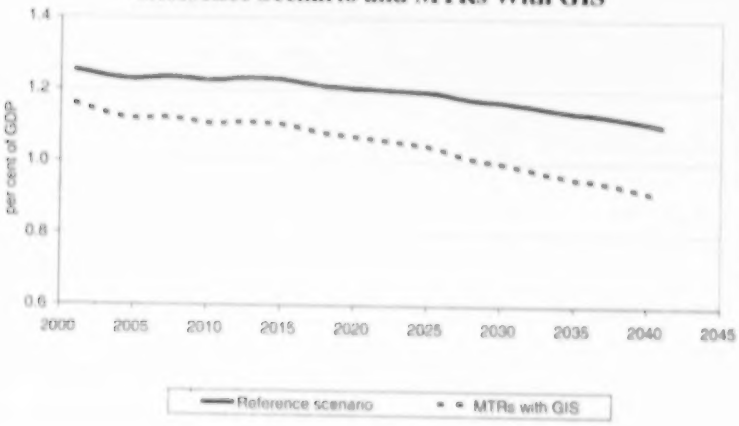
To avoid overstating the tax expenditure and to allow for the presence of RRIFs with faster payout rates, though, we assume a 20-year term from age 65 to 84.

C. Projection With Modified Marginal Tax Rates

Figure C.1 provides a projection for a modified form of the cash flow tax expenditure that is reported on an annual basis. The *TE* is modified by adjusting the marginal tax rates on RPP/RRSP benefits and investment income to take into account the effect of additional income on the Guaranteed Income Supplement (and Allowance) benefits of lower-income individuals age 60 or older. The MTRs for 2001 are increased from 17.6% to 21.0% for benefits and 20.6% to 21.9% for investment income.[4]

These changes do not affect the flows into and out of RPPs and RRSPs but do affect the *TE* levels. By increasing the weight given to benefits in the *TE* formula, they reduce the *TE* level in all years and slightly increase its downward trend as the population ages over the projection period. The *TE* in this projection declines from 1.16% of GDP in 2001 to 0.91% in 2041.

Figure C.1
Projected Tax Expenditure
Reference Scenario and MTRs With GIS



[4] Based on T1 data for 2000, about 22% of households headed by seniors receive both pension income and Guaranteed Income Supplement benefits.

Elimination of the Federal Capital Tax:

Building on the Canadian Tax Advantage

1. Introduction

Enhancing the well-being of Canadians through higher living standards and a better quality of life lies at the heart of the Government's economic and social policies. Achieving high and sustainable living standards and a better quality of life requires that economic and social progress advance together. By undertaking the right investments and creating favourable conditions for growth, the Government can help provide the foundation for such progress.

Beyond a stable fiscal and monetary climate, the key drivers of a stronger economy are those that allow Canada to improve its productivity performance. These include such factors as a tax system that encourages economic growth and job creation, and investments in new technologies and research.

An efficient tax structure can enhance incentives to work, save and invest. It can also support entrepreneurship and the emergence and growth of small businesses. A competitive tax system is also critical in encouraging investment in Canada, leading to greater economic growth and job creation.

In 2000 the Government set out a five-year $100-billion tax reduction plan that provided significant personal income tax reductions and strengthened the foundation for economic growth and job creation. The plan:

- reduced personal income taxes by lowering tax rates, eliminating the deficit reduction surtax and restoring full indexation—by 2004–05 the plan will have reduced federal personal income taxes by 21% on average and by 27% for families with children;
- reduced the capital gains inclusion rate from three-quarters to one-half and introduced the small business capital gains rollover—enhancing incentives for entrepreneurs and small businesses to invest; and
- will have reduced the general corporate income tax rate from 28% in 2000 to 21% in 2004—contributing to creating a Canadian tax advantage for investment.

As a result, and taken together with cuts in provincial tax rates, in 2003 the average federal/provincial corporate tax rate (including capital taxes) is below the average U.S. rate.

The 2003 budget introduced measures to build on the Five-Year Tax Reduction Plan to further promote entrepreneurship and small business, and strengthen the Canadian advantage for investment. In particular, the 2003 budget announced the elimination of the federal capital tax over a period of five years. It also proposed to reduce the corporate tax rate of the resource sector to 21% over five years while improving the tax structure of this key sector.

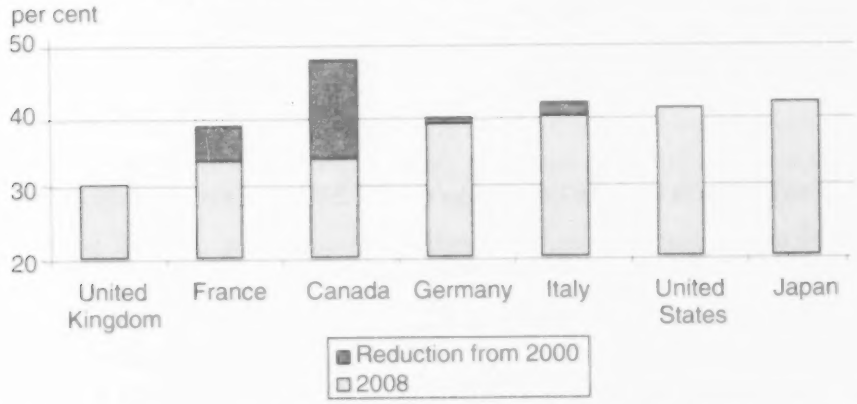
This paper focuses on the elimination of the federal capital tax and how it is contributing to strengthening the Canadian tax advantage.

2. BACKGROUND

The 7-percentage-point reduction in the general federal corporate income tax rate (from 28% to 21%) announced in the 2000 budget was an important step to make Canada's corporate tax system more competitive internationally and more consistent across industries.

In 2000 Canada's corporate tax rate (including federal and provincial capital taxes) was the highest of the Group of Seven (G-7) countries. While manufacturing (21%) and small business (12%) had competitive corporate income tax rates, the remaining sectors of the economy were facing a corporate income tax rate of 28%. A competitive tax system is critical in fostering a strong and productive economy by encouraging investment in Canada and in minimizing the incentive to shift income to other jurisdictions with lower corporate tax rates.

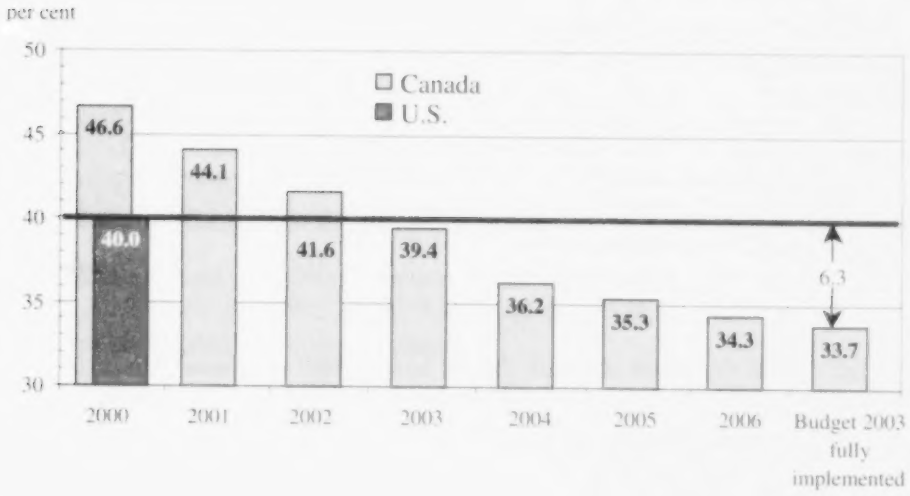
Chart 1
Corporate Tax Rates in G-7 Countries in 2000 and 2008



Note: Corporate tax rates are average federal corporate income tax rates plus provincial/state corporate income tax rates and include the income tax rate equivalent of capital taxes. Rates effective by 2008, based on changes announced to June 2003.

The elimination of the federal capital tax will strengthen the Canadian tax advantage. When the federal capital tax is eliminated in 2008, and taking into account announced changes to provincial tax rates, the average federal/provincial corporate tax rate in Canada, including the effect of capital taxes, will be more than 6 percentage points lower than in the U.S.

Chart 2
Corporate Tax Rates in Canada and the U.S.



Note: Rates are based on changes announced to June 2003. Rates are average federal corporate income tax plus provincial/state corporate income tax rates and include the income tax rate equivalent of capital taxes.

3. Capital Taxes

Federal Capital Taxes

The federal capital tax was introduced in the 1989 budget, at a time when the federal government was struggling with budgetary deficits. It applies at a rate of 0.225% to all corporations, including financial institutions, on taxable capital employed in Canada exceeding $10 million. A corporation's taxable capital is generally described as the total of its shareholders' equity, surpluses and reserves, as well as loans and advances to the corporation, less certain types of investments in other corporations. A corporation's federal income surtax (1.12% of taxable income) is deductible against the corporation's capital tax liability. Surtax credits in excess of a corporation's capital tax liability can be carried back to reduce the federal capital tax paid in the three previous years or carried forward to reduce capital tax liability in the following seven years.

The revenue from the federal capital tax (after surtax offsets) was $1.3 billion in 2000, paid by approximately 18,500 corporations. Of that number, approximately two-thirds (about 12,000) had no taxable income (see Table 1).

Table 1
Tax Status of Corporations Subject to the Federal Capital Tax, 2000

	Number of corporations	Capital tax paid ($ million)	Average assets ($ million)
No taxable income	11,998 (65%)	720 (54%)	112
Taxable income	6,463 (35%)	625 (46%)	295
Total	18,461	1,345	175

Source: Department of Finance Canada.

Budget 2003 announced the elimination of the federal capital tax, as follows:

- First, the capital threshold at which the tax applies will be raised from $10 million to $50 million effective 2004. As of 2004 medium-sized businesses under the $50-million threshold will no longer have to pay the tax.
- Second, the rate of the tax will be reduced in stages over a period of five years so that by 2008, the tax will be completely eliminated.

Table 2
Federal Capital Tax Rate Reduction Schedule

	2003	2004	2005	2006	2007	2008
Rate (%)	0.225	0.200	0.175	0.125	0.0625	0

The federal government also levies a capital tax on large financial institutions that applies to banks, trust companies, mortgage loan companies and life insurers. It is levied at a rate of 1% of taxable capital employed in Canada in excess of $200 million and 1.25% on taxable capital in excess of $300 million. The amount of income tax paid by the corporation is deductible against this tax. In general, financial institutions should have long-term income tax levels in excess of the capital tax on large financial institutions. This tax ensures that all large financial institutions pay a minimum amount of tax to the federal government each year. No changes are proposed to the special capital tax on large financial institutions.

Provincial Capital Taxes

Quebec was the first province to introduce a capital tax in 1947 and other provinces followed suit in later years. Ontario introduced a capital tax in 1957, British Columbia in 1973, Manitoba in 1976 and Saskatchewan in 1980. Nova Scotia and New Brunswick introduced a general capital tax as part of the harmonized sales tax agreement in 1997.

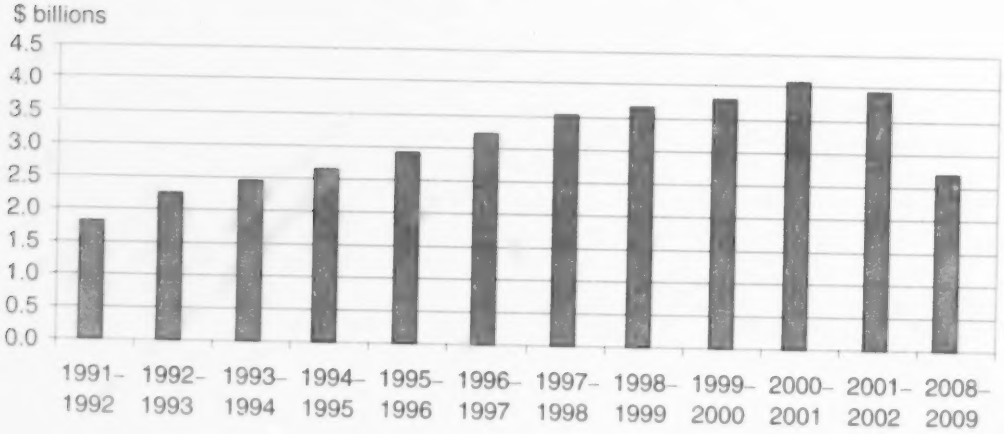
Provincial capital taxes specific to financial institutions are more recent. Newfoundland was the first province to introduce such a tax in 1982, Nova Scotia followed in 1986, New Brunswick in 1987, Prince Edward Island in 1988 and Alberta in 1990.

Recently, several provinces have adopted measures to reduce the impact of capital taxes in Canada:

- On April 1, 2001, Alberta eliminated its capital tax on financial institutions.
- British Columbia reduced its capital tax on non-financial corporations by half effective September 1, 2001, and eliminated it entirely effective September 1, 2002.
- Ontario's 2003 budget proposes to reduce capital tax rates by 10% on January 1, 2004, with the intention of eliminating its capital tax by the time the federal government eliminates the federal capital tax.

Currently nine provinces impose capital taxes on financial institutions, the exception being Alberta. Only six provinces impose capital taxes on general corporations: Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba and Saskatchewan. These taxes are an important source of provincial government revenues. Provincial capital taxes are deductible from income for tax purposes both at the federal and provincial level. Unlike federal capital taxes, which can be reduced by the income or the income surtax paid, most provincial capital taxes have no offset mechanism. The Appendix provides more details on the structure of provincial capital taxes.

Chart 3
Provincial Capital Tax Revenues



Source: Statistics Canada, Public Institutions Division; 2008-2009 is a forecast from the Department of Finance Canada.

4. Economic Impacts of Eliminating the Federal Capital Tax

Like taxes on business income, taxes on business capital reduce investment by raising the required rate of return on incremental investment. A firm will only undertake investments that are expected to generate at least enough income (net of wages and other direct production costs and capital depreciation) to pay for the financial cost of capital and taxes. Taxes on business therefore mean less investment because they raise the required rate of return on investment. Unlike income taxes, however, capital taxes must be paid even if the investment is not profitable, which makes them more damaging to investment. For example, capital taxes add to the losses incurred by businesses during economic downturns and reduce the cash flow of start-ups and expanding firms. In other words, because they are profit-insensitive, capital taxes increase the risk of investing to business more than income taxes, which share risks between the firm and the government.

In order to quantify the economic impacts of removing the federal capital tax, simulations have been undertaken with a "general equilibrium" tax model developed by the Department of Finance Canada. This model embodies the essential features of the Canadian economy and tax system, along with standard economic principles-in particular, that taxes affect incentives to work, save and invest.[1] The model is described as "general equilibrium" because it is assumed that capital and labour are fully employed at all times. As a result, general equilibrium models are used to assess how taxes (and economic policies in general) affect incentives to work, save and invest as well as to assess how efficiently, rather than how intensively, capital and labour are used. This is in contrast to macroeconomic forecasting models, which emphasize how government policies can help the economy return to or stay on a "full-employment" growth path.

The economic impacts of eliminating the federal capital tax are summarized in Table 3. Also shown are the impacts of a corporate income tax rate reduction that involves the same revenue loss as eliminating the federal capital tax. The simulations incorporate measures that offset the revenue loss from the tax cut, eliminating any direct effect on the government budget balance. The simulations thus abstract from changes in the Government's fiscal position such that the model captures the pure efficiency gain of the tax reductions.[2] Note, however, that the model cannot capture the risk-shifting aspect of the federal capital tax, so the benefits of eliminating the federal capital tax are understated.

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[1] A detailed description of the model is available.

[2] These offsetting measures are included in the model by imposing "lump-sum" or per capita taxes that have no impact on the incentives to work, save or invest. The federal capital tax is of course being eliminated without any offsetting measures, so it will increase the level of demand in the economy.

Table 3
Impact of Revenue-Neutral Tax Reductions[1]

	Welfare[2] gain (in dollars) per dollar of lost government revenue	Consumer spending	Output	Capital stock
	Present value	% change in steady state level		
Elimination of the federal capital tax[3]	0.9	0.4	0.6	1.1
A revenue-equivalent reduction in the corporate statutory rate[4]	0.4	0.2	0.3	0.5

[1] The revenue loss is recovered through lump-sum (non-distorting taxes.)
[2] Includes the value of leisure as well as consumer spending.
[3] Excludes impacts from profit insensitivity of the Federal capital tax.
[4] Excludes impacts arising from changed incentives to shift income out of Canada.

The model indicates that the elimination of the federal capital tax will provide a significant boost to investment, which, in the long run, will raise the capital stock just over 1%. This is accompanied by a permanent increase in real output and consumer spending of about one-half of 1%. These benefits are easier to understand when expressed per dollar of tax revenue foregone. The first column of Table 3 shows that the present value of the welfare gain, which is defined as the sum of consumer spending and an imputed value of leisure, equals 90 cents for every dollar of revenue lost by eliminating the federal capital tax. As noted above, this is a pure efficiency gain since, for purposes of the simulation, the revenue lost by eliminating the federal capital tax is assumed to be recovered by raising other taxes that do not affect economic efficiency.

The economic benefits of eliminating the federal capital tax are roughly twice as large as the benefits from a revenue-equivalent reduction in statutory rates, even without considering the profit insensitivity aspect of capital taxes. A key source of the discrepancy is the interaction of tax rate reductions with capital cost allowances (CCAs) and adjustment costs. When CCA exceeds economic depreciation, as it does on average in Canada, firms receive a tax benefit on new investment that is valued at the corporate tax rate. Reducing the statutory rate therefore lowers the value of this CCA tax benefit. Since there is no interaction between CCA and capital taxes, eliminating the federal capital tax has a larger impact on the effective tax rate on new investment than a revenue-equivalent reduction in the income tax rate.

This effect is reinforced when the adjustments that firms must go through when they make new investments are taken into consideration. Adjustment costs, modelled in the form of temporarily lower production as firms invest, reduce taxable income, and an income tax rate reduction increases the after-tax cost of this "expense." This also lowers the benefit of the income tax rate cut for new investment. There is no parallel effect with capital taxes.

While the simulation results show that statutory rate reductions are less potent than cuts in capital taxes, the benefits of lowering statutory rates are sensitive to the starting point. In 2000 Canada's combined federal/provincial statutory rate was the highest in the G-7, giving multinational enterprises (MNEs) operating in Canada an incentive to shift taxable income to other jurisdictions. The rate reductions announced in Budget 2000, along with cuts at the provincial level, will make Canada a low-tax jurisdiction in the G-7. As a result, the income tax cuts initiated in 2000 will deliver two benefits: improved economic performance and potential additional revenue as Canadian-based MNEs have less of an incentive to shift taxable income out of Canada. In contrast, the hypothetical reduction considered in this analysis implicitly[3] takes projected levels in 2005 as the starting point and assumes that the rate reduction has no impact on tax planning by MNEs.

[3] The model used in this analysis does not capture tax base shifting by MNEs.

APPENDIX: MAIN FEATURES OF FEDERAL AND PROVINCIAL CAPITAL TAXES, 2003

	General	Financial Institutions
	Rate (deduction)	**Rate (deduction)**
Federal	0.225% ($10 million, $50 million after 2003)[2]	1/1.25% ($200 million)[1, 6]
Newfoundland and Labrador	None	4% ($5 million if taxable capital < $10 million; else none)
Prince Edward Island	None	3% ($2 million)
Nova Scotia[7]	If taxable capital < $10 million: 0.5% ($5 million); if taxable capital > $10 million: 0.25% (none)[7]	3% ($0.5 million; $10 million if trust/loan with head office in Nova Scotia)
New Brunswick	0.3% ($5 million)	3% ($10 million)
Quebec[9]	0.6% ($250,000)	1.2% ($250,000)[8, 11]
Ontario[12]	0.3% ($5 million)	0.6-0.9% ($5 million)[5, 11]
Manitoba[7]	0.3% on first $10 million of taxable capital; 0.5% on the excess ($5-million exemption, becoming a deduction on January 1, 2004)	3% ($5-million exemption, becoming a deduction on January 1, 2004)
Saskatchewan[7]	0.6% ($10 million to $15 million)[10]	If taxable capital < $400 million: 0.7%; else: 3.25% ($10 million to $15 million)[10]
Alberta	None	Repealed on April 1, 2001
British Columbia	Repealed on September 1, 2002	1% ($5 million);[11] If taxable capital > $1 billion and head office outside B.C.: 3% ($5 million)

Source: M.G. Mallin, *Preparing Your Corporate Tax Returns, Canada and Provinces*, 23rd edition, 2003, CCH Canadian Limited.

1 1% on capital between $200 million and $300 million, 1.25% on the excess.
2 Large resource companies pay the greater of the general capital tax and a special gross resource revenue tax.
3 The Nova Scotia general capital tax is set to expire on March 31, 2006.
4 The general federal capital tax will be phased out over five years: 0.2% in 2004, 0.175% in 2005, 0.125% in 2006 and 0.0625% in 2007. Reduced by surtax on income.
5 0.6% on the first $400 million in capital, 0.72% on the excess for non-deposit-taking institutions, 0.9% on the excess for deposit-taking institutions. Credit unions are exempt.
6 Reduced by income tax.
7 Insurance corporations are treated as ordinary corporations.